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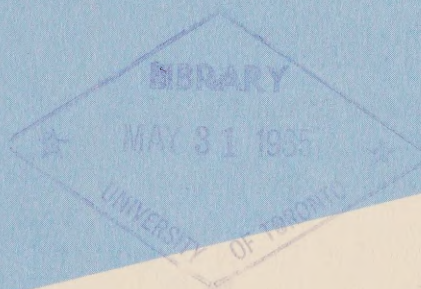
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DATA RECORD

ST. LAWRENCE ESTUARY

June 10 to July 24, 1963

No. 1

1965 Data Record Series

Canada (Canadian) Oceanographic Data Centre

Programmed by the
Canadian Committee on Oceanography

1965

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C35

1965

no. 1-7



ROGER DUHAMEL, F. R. S. C.
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ST. LAWRENCE ESTUARY

June 10 to July 24, 1963

ST. LAWRENCE ESTUARY

CODC Reference: 10-63-003

No. 1 - 7

1965 Data Record Series

Ship

M.V. T. 100

Local Cruise designation

ST. 100

Cruise period

June 10 to July 24, 1963

Observer

M. Goss

C. J. Langford

C. G. Myers

R. P. Fries

R. Goss

MAJOR WORKS BRANCH
100
ATLANTIC OCEANOGRAPHIC GROUP

Canadian Oceanographic Data Centre

615 Booth St., Ottawa, Canada

Programmed by the Canadian Committee on Oceanography

DEPARTMENT OF MINES AND TECHNICAL SURVEYS
and
FISHERIES RESEARCH BOARD OF CANADA

ST. LAWRENCE ESTUARY

Ship: M.V. THETA
Local Cruise designation: THETA-1-63
Cruise period: June 10 - July 24, 1963
Observers: D. Dobson
C.J. Langford
C.J. Bayers
F.D. Ewing
R. Cassivi

MARINE SCIENCES BRANCH
and
ATLANTIC OCEANOGRAPHIC GROUP
Bedford Institute of Oceanography, Dartmouth, N.S.

SECTION I

Description of data collection procedures

THETA



Christensen Canadian Enterprises Ltd.

60°00'

70°00'

TRACK CHART

CRN 10-63-003 (THETA-1-63)

50°00'

50°00'

Pointe-des-Monts

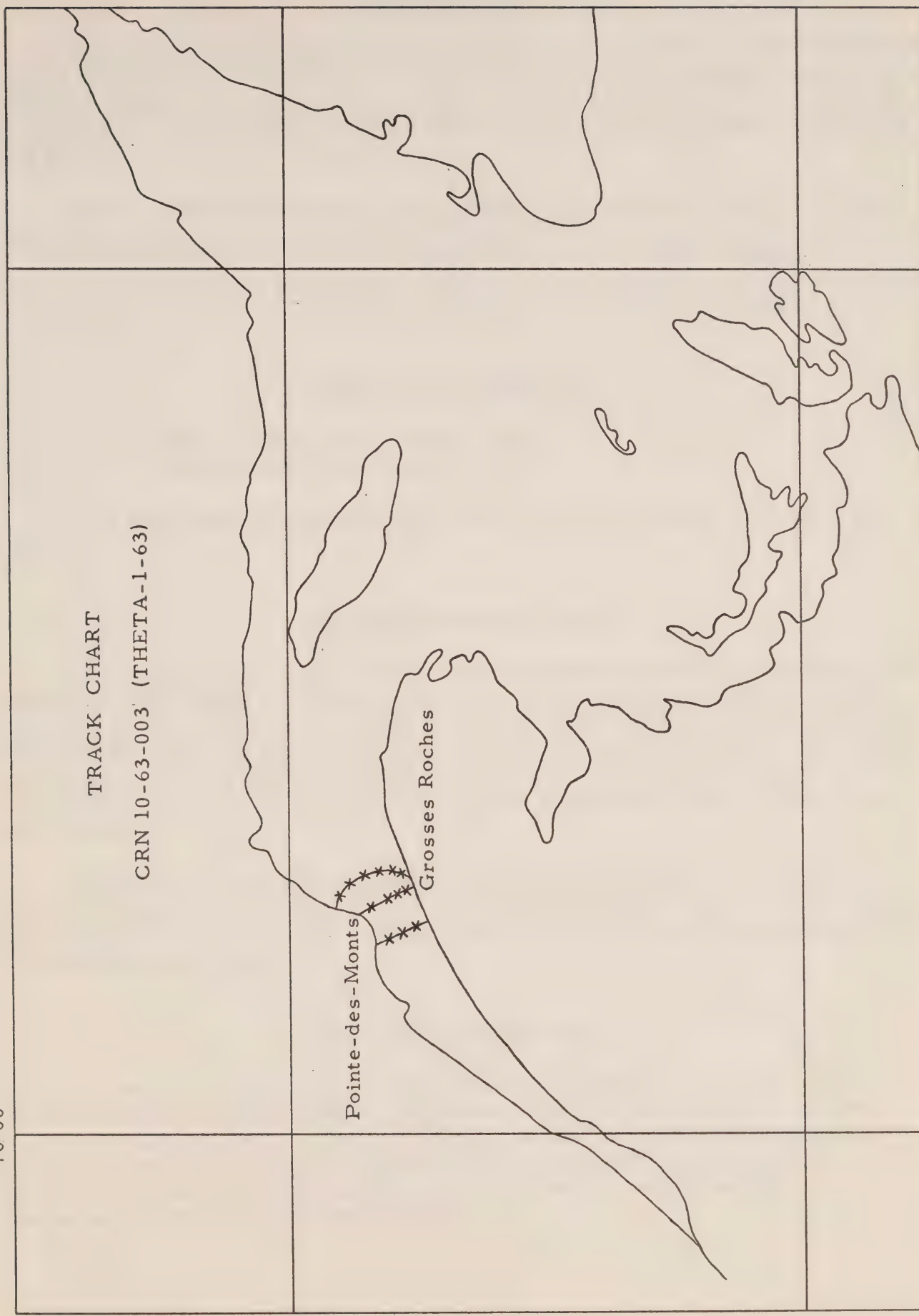
Grosses Roches

46°00'

46°00'

60°00'

70°00'



INTRODUCTION

The purpose of this cruise was to provide data for an investigation into the mechanism whereby the Gaspé Current is formed. A reasonably long period of synoptic observations of the flow of water in the three distinctive layers, along a section line, was obtained. At the same time, and in company with CNAV "Sackville," detailed oceanographic observations were gathered.

The co-ordinated part of the cruise consisted of 8 crossings of the St. Lawrence Estuary on 3 lines in conjunction with CNAV "Sackville" (see track chart). The centre line, from Grosses Roches to Pointe-des-Monts, was occupied 6 times between July 1-3, at intervals spaced so as to give adequate coverage for one complete tidal cycle. Two lines, 20 miles east and west of the centre line respectively, were occupied once each.

EXTRACT OF CRUISE LOG

Depart Halifax, N.S. - June 10, 1963.

Return Halifax, N.S. - July 24, 1963.

The ship called occasionally at Baie Comeau and Les Mechins, Que. for water and fuel.

OBSERVATION PROCEDURES

A total of 80 oceanographic stations was completed using Knudsen reversing water bottles at standard depths. An additional observation was taken at 15 metres at stations adjacent to moored temperature pressure recorders. Reversing thermometers used were of the following types: Negretti and Zambra, Richter and Wiese and Yoshino. The deepest sample was taken at 326 metres. Surface samples were obtained from a metal bucket. A total of 900 salinity samples was collected. Weather observations were recorded by the ship's officers.

Current recorders were moored on the centre line at depths of 13, 75, and 225 metres during the period of observations. The western line was occupied June 30, crossings of the centre line July 1-3, and the eastern line on July 4. The current measurements will be published at a later date.

BATHYTHERMOGRAPH DATA

A total of 80 BT observations was taken and processed at the BT data centre of the Bedford Institute of Oceanography, Dartmouth, N.S. One BT observation was made at each oceanographic station. Section IV depicts the hand-drawn BT traces on standard pre-printed graphs resembling BT calibration grids of 2 depth ranges, 125 metres and 275. The numbers appearing on these grids correspond to the consecutive number of the oceanographic stations occupied concurrently.

PERSONNELAt Sea:

D. Dobson
 C.J. Langford
 C.J. Bayers
 J.W. Pritchard
 F.D. Ewing
 R. Cassivi
 C.K. Chamberlin
 A. Broome
 R.E. Rochon
 L. LeBlanc
 Kwang Kho Kwan
 Trinh Quan Minh

Officer in Charge

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Compilation of data

J.R. Chevrier
 T.A. Holler

Salinity determination

M.E. MacLean
 W. Young

BT processing

T.A. Grant
 D.M. MacDonald

BT drawings

T.A. Grant

SECTION II

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "estimate of precision" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "**interpolation error estimate**" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; first, to give an indication of the quality of the interpolated data; second, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "measurement error estimate" comprises the "**combined measurement and interpolation error estimate**". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

IDENT. CODE		LATITUDE (N=+)		LONGITUDE (W=+)		DATE		TIME		7		8		9		VESSEL	
SOURCE DATA		REG. NO.		MIN. 10		HOURS 11		MIN. 12		TO BOTTOM		SUN. 13		DIST. 14		ENTERED BY	
1		2		3		4		5		6		7		8		9	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123
124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141
142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177
178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195
196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213
214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231
232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249
250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267
268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285
286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303
304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321
322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339
340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357
358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375
376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393
394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411
412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429
430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447
448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465
466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483
484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501
502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519
520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537
538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555
556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573
574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591
592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609
610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627
628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645
646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663
664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681
682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699
700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717
718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735
736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753
754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771
772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789
790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807
808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825
826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843
844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861
862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879
880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897
898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915
916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933
934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951
952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969
970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987
988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

- σ_i = Standard deviation of the combined error estimates at standard oceanographic depth,
 ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $1/3 (V_{i_1} - V_{i_2})$
 γ = Interpolation polynomial coefficient.
 Z_j = Observed depth.
 Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the combined measurement and interpolation error estimate. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the interpolation error estimate is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

- (1) CRUISE REFERENCE NUMBER: Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.
- (2) CONSECUTIVE NUMBER: Indicates the chronological order in which the stations were occupied.
- (3) LATITUDE: Indicate the position of the platform at the time of observation.
- (4) LONGITUDE:
- (5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).
- (6) YEAR:
- (7) MONTH:
- (8) DAY:
- (9) HOUR: The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.
- (10) COUNTRY/INSTITUTE: The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.
- (11) DEPTH: The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".
- (12) MAXIMUM SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).
00 m - 50 m = 00
51 m - 150 m = 01
151 m - 250 m = 02
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage.
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the wind-propagated wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the predominant non-wind-propagated wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE (WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED (WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677.
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700.
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_2
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01°C . Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 \text{ C1}\%$, reported in:
 a. 1/100 parts per 1000, or
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

(8) PO ₄	Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
(9) -P-	Total Phosphorus reported to hundredths of microgram-atoms per litre.
(10) NO ₂	Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre — No dissolved nitrogen included.
(11) NO ₃	Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
(12) SiO ₂	Silicate-Silicon reported to tenths of microgram-atoms per litre.
(13) pH	The pH value.

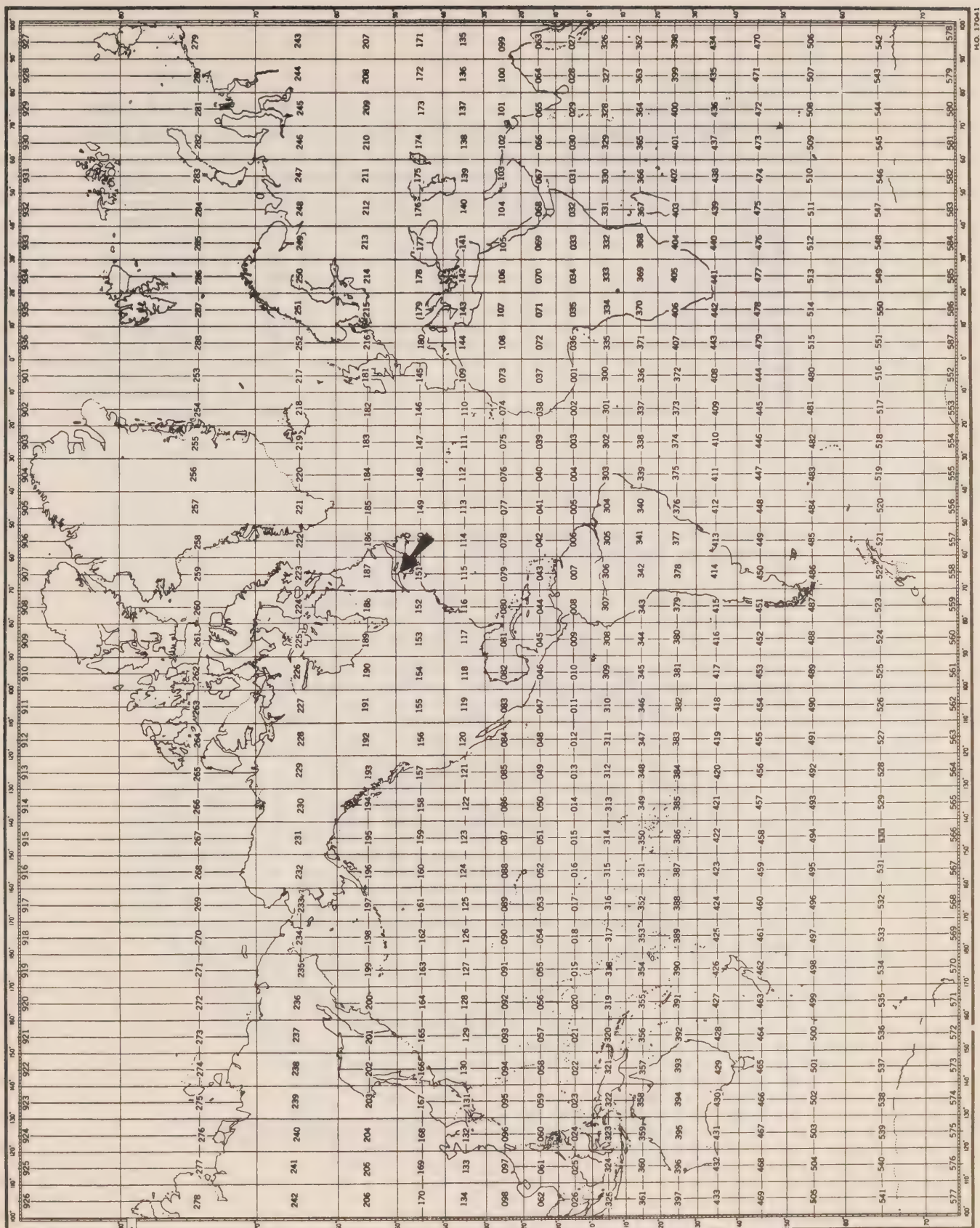
NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY:
- A. The reported salinity values are measured to three decimal places.
 - (i) the interpolation error estimate is less than twice the standard deviation of measurement.
 - the interpolated value is reported to three decimal places (e.g., 30.139).
 - (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 - the interpolated value is reported to two decimal places, and followed by the interpolation error estimate (e.g., 29.23 C).
 - B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 - the interpolated value is reported to two decimal places, and followed by the combined measurement and interpolation error estimate (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "Introduction" to section II of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^P \delta \rho dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = 1/g \int_0^P p \delta \rho dp = \int_0^Z \rho p \delta \rho dz$$
- χ is expressed in units of 10^8 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).



MARSDEN SQUARE CHART

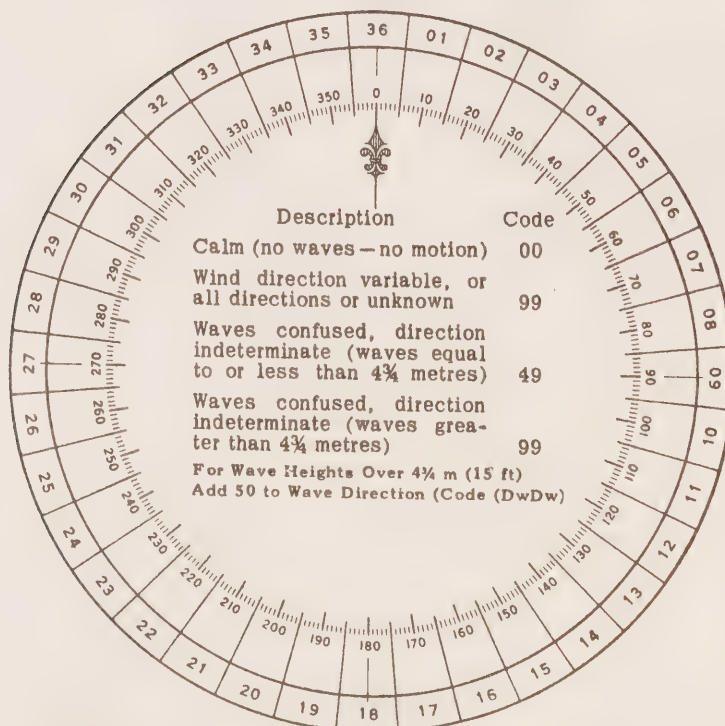
Table 1
CONVERSION
MINUTES TO $\frac{1}{10}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (Pw)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (Hw)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)		0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)	Add	3 6½ m (21 ft)
4	2 m (6½ ft)	50	4 7 m (22½ ft)
5	2½ m (8 ft)	to	5 7½ m (24 ft)
6	3 m (9½ ft)	Dw Dw	6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests,	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww			
No meteors except photometeors	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
	03	Clouds generally forming or developing	
Haze, dust, sand or smoke	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	More of less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	

ww = 20 - 29		Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	
20	Drizzle (not freezing) or snow grains	not falling as shower(s)	
21	Rain (not freezing)		
22	Snow		
23	Rain and snow or ice pellets, type (a)		
24	Freezing drizzle or freezing rain		
25	Shower(s) of rain		
26	Shower(s) of snow, or of rain and snow		
27	Shower(s) of hail, or of rain and hail		
28	Fog or ice fog		
29	Thunderstorm (with or without precipitation)		
ww = 30 - 39		Duststorm, sandstorm, drifting or blowing snow	
30	Slight or moderate duststorm or sandstorm	- has decreased during the preceding hour	
31		- no appreciable change during the preceding hour	
32		- has begun or has increased during the preceding hour	
33	Severe duststorm or sandstorm	- has decreased during the preceding hour	
34		- no appreciable change during the preceding hour	
35		- has begun or has increased during the preceding hour	
36	Slight or moderate blowing snow	generally low (below eye level)	
37	Heavy drifting snow		
38	Slight or moderate blowing snow	generally high (above eye level)	
39	Heavy blowing snow		
ww = 40 - 49		Fog or ice fog at the time of observation	
40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer		
41	Fog or ice fog in patches		
42	Fog or ice fog, sky visible	has become thinner during the preceding hour	
43	Fog or ice fog, sky invisible		
44	Fog or ice fog, sky visible	no appreciable change during the preceding hour	
45	Fog or ice fog, sky invisible		
46	Fog or ice fog, sky visible	has begun or has become thicker during the preceding hour	
47	Fog or ice fog, sky invisible		
48	Fog, depositing rime, sky visible		
49	Fog, depositing rime, sky invisible		

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

- | | | |
|----|--|--|
| 50 | Drizzle, not freezing, intermittent | } slight at time of observation |
| 51 | Drizzle, not freezing, continuous | |
| 52 | Drizzle, not freezing, intermittent | } moderate at time of observation |
| 53 | Drizzle, not freezing, continuous | |
| 54 | Drizzle, not freezing, intermittent | } heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous | |
| 56 | Drizzle, freezing, slight | |
| 57 | Drizzle, freezing, moderate or heavy (dense) | |
| 58 | Drizzle and rain, slight | |
| 59 | Drizzle and rain, moderate or heavy | |

ww = 60 - 69 Rain

- | | | |
|----|---|-----------------------------------|
| 60 | Rain, not freezing, intermittent | } slight at time of observation |
| 61 | Rain, not freezing, continuous | |
| 62 | Rain, not freezing, intermittent | } moderate at time of observation |
| 63 | Rain, not freezing, continuous | |
| 64 | Rain, not freezing, intermittent | } heavy at time of observation |
| 65 | Rain, not freezing, continuous | |
| 66 | Rain, freezing, slight | |
| 67 | Rain, freezing, moderate or heavy | |
| 68 | Rain or drizzle and snow, slight | |
| 69 | Rain or drizzle and snow, moderate or heavy | |

70 - 79 Solid precipitation not in showers

- | | | |
|----|---|-----------------------------------|
| ww | | |
| 70 | Intermittent fall of snow flakes | } slight at time of observation |
| 71 | Continuous fall of snow flakes | |
| 72 | Intermittent fall of snow flakes | } moderate at time of observation |
| 73 | Continuous fall of snow flakes | |
| 74 | Intermittent fall of snow flakes | } heavy at time of observation |
| 75 | Continuous fall of snow flakes | |
| 76 | Ice prisms (with or without fog) | |
| 77 | Snow grains (with or without fog) | |
| 78 | Isolated starlike snow crystals (with or without fog) | |
| 79 | Ice pellets, type (a) | |

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- | | | |
|----|--|---|
| 80 | Rain shower(s), slight | |
| 81 | Rain shower(s), moderate or heavy | |
| 82 | Rain shower(s), violent | |
| 83 | Shower(s) of rain and snow mixed, slight | |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy | |
| 85 | Snow shower(s), slight | |
| 86 | Snow shower(s), moderate or heavy | |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed | } - slight |
| 88 | | |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | } - moderate or heavy |
| 90 | | |
| 91 | Slight rain at time of observation | } thunderstorm during the preceding hour but not at time of observation |
| 92 | Moderate or heavy rain at time of observation | |
| 93 | Slight snow, or rain and snow mixed or hail at time of observation | } thunderstorm at time of observation |
| 94 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation | |
| 95 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | } thunderstorm at time of observation |
| 96 | Thunderstorm, slight or moderate, with hail at time of observation | |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation | } thunderstorm at time of observation |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation | |
| 99 | Thunderstorm, heavy, with hail at time of observation | |

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{3}{4}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11C.C.O. Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N.B.
04. Arctic Biological Station, St. Anne de Bellevue, P.Q.
05. Biological Station, St. John's, Nfld.
06. Station de Biologie Marine, Grande Riviere, P.Q.
07. Canadian Hydrographic Service.
08. Naval Research Establishment, Dartmouth, N.S.
09. Pacific Naval Laboratory, Esquimalt, B.C.
10. Bedford Institute of Oceanography (Atlantic Oceanographic Institute).
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Inland Region, Oceanographic Research, Ottawa.
14. Institute of Oceanography, Dalhousie University.

SECTION III

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Bedford Institute of Oceanography
<u>Observation platform:</u>	M.. V.. "Theta"
<u>Vessel's cruising speed:</u>	10 knots
<u>Total number stations occupied:</u>	80
<u>Anemometer height above sea level:</u>	9 metres
<u>Barometer readings</u>	Aneroid Barometer (corrected)
<u>Air temperature</u>	Sling Psychrometer
<u>Wet bulb temperature</u>	Sling Psychrometer
<u>Surface sea water temperature</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003

C-REF-NO 003	YR 1963	DEPTH 40	WAVES 1 24X0	AIR T 15.0	VIS 7
CONS. NO 001	MONTH 6	MXSAMPD 00	WAVES 2 00X0	WET B 14.0	STN
LAT 48-500N	DAY 30	NO.DPTH 3	WND-DIR 240	WW-CODE 05	
LON 67-373W	HR 13.7	W-COLOR 20	WND-SPD 01	CLD-TPE 0	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.4	CLD-AMT 4	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
137	0000	115 B	25728		1952	14841
137	0010	0752	27537		2152	14715
137	0018	0400	29040		2308	14592

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1150 B	25728		1952	14841	0000	00000	8207
0010	0752	27537		2152	14715	0073	00003	6294

C-REF-NO 003	YR 1963	DEPTH 82	WAVES 1 10X1	AIR T 14.6	VIS 6
CONS. NO 002	MONTH 6	MXSAMPD 01	WAVES 2 00X0	WET B 13.6	STN
LAT 48-518N	DAY 30	NO.DPTH 6	WND-DIR 100	WW+CODE 05	
LON 67-385W	HR 14.4	W-COLOR 20	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.4	CLD-AMT 9	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
144	0000	130 B	26958		2021	14909
144	0010	0880	27442		2127	14764
144	0020	0437	28826		2288	14605
144	0030	0296	29420		2347	14554
144	0050	0193	30878		2470	14531
144	0080	-0044 B	32295		2597	14448

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300 B	26958		2021	14909	0000	00000	7549
0010	0880	27442		2127	14764	0070	00003	6531
0020	0437	28826		2288	14605	0128	00012	4991
0030	0296	29420		2347	14554	0176	00024	4427
0050	0193	30878		2470	14531	0253	00054	3248
0075	-0021 F	3206 I		2577	14455	0322	00097	2234

C-REF-NO 003	YR 1963	DEPTH 208	WAVES 1 24X2	AIR T 15.6	VIS 3
CONS. NO 003	MONTH 6	MXSAMPD 02	WAVES 2 26X2	WET B 14.8	STN
LAT 48-536N	DAY 30	NO.DPTH 12	WND-DIR 240	WW-CODE 47	
LON 67-395W	HR 14.9	W-COLOR 30	WND-SPD 04	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	RARD 1009.1	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
149	0000	126 B	26904		2024	14895
149	0010	0989	27134		2087	14801
149	0020	0537	28717		2269	14645
149	0030	0282 B	29699		2370	14551
149	0050	0183				
149	0075	0054 B	31833		2555	14486
149	0100	-0046	32383		2604	14452
149	0125	-0007	32780		2634	14479
149	0150	0131	33278		2666	14553
149	0175		33639			
149	0200	0285 B	33832		2699	14637
149	0205	0297	33910		2704	14644

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1260 B	26904		2024	14895	0000	00000	7518
0010	0989	27134		2087	14801	0072	00004	6914
0020	0537	28717		2269	14645	0133	00012	5169
0030	0282 B	29699		2370	14551	0180	00024	4205
0050	0183	3097 I		2478	14528	0254	00053	3173
0075	0054 B	31833		2555	14486	0325	00097	2440
0100	-0046	32383		2604	14452	0380	00146	1975
0125	-0007	32780		2634	14479	0426	00199	1687
0150	0131	33278		2666	14553	0465	00253	1386
0175		33639						
0200	0285 B	33832		2699	14637	0527	00363	1088

C-REF-NO 003	YR 1963	DEPTH 302	WAVES 1 25X0	AIR T 15.8	VIS 4
CONS. NO 004	MONTH 6	MXSAMPD 03	WAVES 2 25X2	WET B 14.7	STN
LAT 48-566N	DAY 30	NO.DPTH 14	WND-DIR 250	WW-CODE 42	
LON 67-427W	HR 16.4	W-COLOR 30	WND-SPD 03	CLD-TPE 3	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
164	0000	124 B	27018		2036	14889
164	0010	0934 B	27340		2111	14783
164	0020	0479	28177		2232	14614
164	0030	0344	29296		2333	14573
164	0050	0252	31376		2506	14564
164	0075	-0055 B	32197		2589	14441
164	0100	-0040	32461		2610	14456
164	0125	0052	32988		2648	14509
164	0150	0184 D	33444		2676	14579
164	0175	0240 B	33670		2690	14611
164	0200	0308 E	33904		2703	14648
164	0225	0359 D	34105		2714	14676
164	0250	0390 D	34222		2720	14695
164	0300	0463 B	34558		2739	14738

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1240 B	27018		2036	14889	0000	00000	7399
0010	0934 B	27340		2111	14783	0071	00003	6682
0020	0479	28177		2232	14614	0132	00012	5520
0030	0344	29296		2333	14573	0182	00025	4558
0050	0252	31376		2506	14564	0257	00054	2911
0075	-0055 B	32197		2589	14441	0321	00093	2115
0100	-0040	32461		2610	14456	0371	00138	1917
0125	0052	32988		2648	14509	0415	00188	1559
0150	0184 D	33444		2676	14579	0451	00239	1298
0175	0240 B	33670		2690	14611	0482	00290	1171
0200	0308 E	33904		2703	14647	0510	00344	1055
0225	0359 D	34105		2714	14676	0536	00399	0954
0250	0390 D	34222		2720	14695	0559	00456	0899
0300	0463 B	34558		2739	14738	0600	00571	0731

C-REF-NO 003	YR 1963	DEPTH 296	WAVES 1 26X1	AIR T 15.4	VIS 4
CONS. NO 005	MONTH 6	MXSAMPD 03	WAVES 2 26X2	WET B 14.8	STN
LAT 49-006N	DAY 30	NO.DPTH 14	WND-DIR 260	WW-CODE 91	
LON 67-452W	HR 17.7	W-COLOR 30	WND-SPD 03	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 7	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
177	0000	123 B	26866		2026	14884
177	0010	0785 B	27500		2144	14728
177	0020	0645	27978		2199	14680
177	0030	0356	28797		2293	14571
177	0050	0310	31115		2480	14586
177	0075	-0042 B	32114		2582	14446
177	0100	-0072	32434		2609	14440
177	0125	0000	32797		2635	14483
177	0149	0102 E	33166		2659	14538
177	0174	0267 B	33736		2693	14623
177	0199	0325 D	33959		2705	14655
177	0224	0370 B	34131		2715	14681
177	0249	0422 E	34340		2726	14710
177	0295	0458 B	34556		2739	14735

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1230 B	26866		2026	14884	0000	00000	7495
0010	0785 B	27500		2144	14728	0069	00003	6363
0020	0645	27978		2199	14680	0131	00012	5839
0030	0356	28797		2293	14571	0185	00026	4945
0050	0310	31115		2480	14586	0266	00058	3154
0075	-0042 B	32114		2582	14446	0333	00099	2183
0100	-0072	32434		2609	14440	0385	00145	1926
0125	0000	32797		2635	14483	0430	00197	1677
0150	0109 E	3319 B		2661	14542	0469	00252	1438
0175	0270 B	33749		2694	14625	0502	00305	1137
0200	0327 D	33966		2706	14656	0529	00357	1025
0225	0372 B	34140		2715	14682	0554	00411	0941
0250	0416 D	3432 E		2725	14707	0577	00466	0851

C-REF-NO 003	YR 1963	DEPTH 269	WAVES 1 29X1	AIR T 17.4	VIS 8
CONS. NO 006	MONTH 6	MXSAMPD 03	WAVES 2 29X2	WET B 13.8	STN
LAT 49-042N	DAY 30	NO.DPTH 14	WND-DIR 290	WW-CODE 60	
LON 67-478W	HR 18.8	W-COLOR 30	WND-SPD 01	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	PARO 1009.8	CLD-AMT 8	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
188	0000	115 B	26658		2024	14853
188	0010	0631 B	27774		2185	14670
188	0020	0425	28476		2261	14595
188	0030	0283	29970		2392	14555
188	0050	0096	31882		2557	14502
188	0075	-0077 B	32391		2606	14433
188	0100	-0063	32556		2618	14446
188	0125	0012	32989		2650	14491
188	0150	0109 B	33160		2658	14542
188	0175	0252 B	33713		2692	14617
188	0200	0343 F	34102		2715	14665
188	0225	0389 B	34285		2725	14691
188	0250	0444 B	34604		2745	14723
188	0268	0447 B	34602		2744	14727

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1150 B	26658		2024	14853	0000	00000	7516
0010	0631 B	27774		2185	14670	0068	00003	5977
0020	0425	28476		2261	14595	0124	00011	5245
0030	0283	29970		2392	14555	0170	00023	4000
0050	0096	31882		2557	14502	0235	00048	2426
0075	-0077 B	32391		2606	14433	0290	00082	1959
0100	-0063	32556		2618	14446	0338	00125	1836
0125	0012	32989		2650	14491	0380	00174	1537
0150	0109 B	33160		2658	14542	0418	00227	1461
0175	0252 B	33713		2692	14617	0451	00281	1149
0200	0343 F	34102		2715	14665	0477	00331	0938
0225	0389 B	34285		2725	14691	0500	00380	0849
0250	0444 B	34604		2745	14723	0519	00427	0670

C-REF-NO 003	YR 1963	DEPTH 208	WAVES 1 33X1	AIR T 17.2	VIS B
CONS. NO 007	MONTH 6	MXSAMPD 02	WAVES 2 32X2	WET B 13.0	STN
LAT 49-078N	DAY 30	NO.DPTH 11	WND-DIR 330	WW-CODE 25	
LON 67-506W	HR 19.9	W-COLOR 30	WND-SPD 02	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	PARO 1009.8	CLD-AMT 7	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	118 B	27203		2061	14870
199	0010	0448 B	28394		2253	14602
199	0020	0342	29174		2324	14569
199	0030	0260	30640		2447	14554
199	0050	0092	31773		2548	14498
199	0075	-0081 B	32197		2590	14429
199	0100	-0031	32614		2622	14462
199	0125	-0006	32761		2633	14480
199	0150	0131 B	33373		2674	14554
199	0175	0248 B	33799		2699	14616
199	0200	0347 D	34128		2717	14667

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1180 B	27203		2061	14870	0000	00000	7161
0010	0448 B	28394		2253	14602	0063	00003	5328
0020	0342	29174		2324	14569	0113	00010	4648
0030	0260	30640		2447	14554	0153	00020	3475
0050	0092	31773		2548	14498	0214	00044	2507
0075	-0081 B	32197		2590	14429	0272	00080	2106
0100	-0031	32614		2622	14462	0321	00124	1804
0125	-0006	32761		2633	14480	0365	00175	1702
0150	0131 B	33373		2674	14554	0403	00228	1314
0175	0248 B	33799		2699	14616	0433	00278	1080
0200	0347 D	34128		2717	14667	0458	00326	0923

C-REF-NO 003	YR 1963	DEPTH 176	WAVES 1 29X0	AIR T 19.0	VIS 8
CONS. NO 008	MONTH 6	MXSAMPD 02	WAVES 2 20X1	WET B 14.5	STN
LAT 49-113N	DAY 30	NO.DPTH 10	WND-DIR 290	WW-CODE 01	
LON 67-530W	HR 20.9	W-COLOR 10	WND-SPD 04	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 5	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
209	0000	125 B	20567		1538	14814
209	0010	0532 B	29065		2297	14646
209	0020	0328	29677		2365	14569
209	0030	0322	30493		2430	14579
209	0050	0003	31927		2565	14460
209	0075	-0055 B	32401		2606	14444
209	0100	-0040	32648		2625	14458
209	0125	0026	32976		2648	14497
209	0150	0166 B	33454		2678	14571
209	0174	0284 B	33918		2706	14633

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1250 B	20567		1538	14814	0000	00000	12211
0010	0532 B	29065		2297	14646	0086	00002	4901
0020	0328	29677		2365	14569	0132	00009	4256
0030	0322	30493		2430	14579	0171	00019	3634
0050	0003	31927		2565	14460	0231	00043	2346
0075	-0055 B	32401		2606	14444	0285	00077	1959
0100	-0040	32648		2625	14458	0332	00118	1775
0125	0026	32976		2648	14497	0374	00166	1554
0150	0166 B	33454		2678	14571	0410	00216	1277
0175	0290 B	33940		2707	14636	0439	00264	1010

C-REF-NO 003	YR 1963	DEPTH 154	WAVES 1 22X0	AIR T 17.8	VIS 8
CONS. NO 009	MONTH 6	MXSAMPD 01	WAVES 2 20X1	WET B 14.0	STN
LAT 49-135N	DAY 30	NO.DPTH 9	WND-DIR 220	WW-CODE 01	
LON 67-546W	HR 21.8	W-COLOR 10	WND-SPD 01	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 1	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
218	0000	138 B	25497		1894	14919
218	0010	0382 B	29425		2340	14588
218	0020	0226	30305		2422	14533
218	0030	0231	30976		2476	14546
218	0050	0060	31953		2564	14486
218	0075	-0070 B	32460		2611	14438
218	0100	-0049	32664		2627	14454
218	0125	0024	32958		2647	14496
218	0150	0243 D	33863		2705	14611

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1380 B	25497		1894	14919	0000	00000	8773
0010	0382 B	29425		2340	14588	0066	00002	4491
0020	0226	30305		2422	14533	0108	00008	3706
0030	0231	30976		2476	14546	0142	00017	3200
0050	0060	31953		2564	14486	0198	00039	2353
0075	-0070 B	32460		2611	14438	0252	00073	1908
0100	-0049	32664		2627	14454	0298	00114	1759
0125	0024	32958		2647	14496	0340	00162	1567
0150	0243 D	33863		2705	14611	0373	00207	1027

C-REF-NO 003	YR 1963	DEPTH 132	WAVES 1 24X0	AIR T 17.2	VIS 8
CONS. NO 010	MONTH 6	MXSAMPD 01	WAVES 2 00X0	WET B 14.3	STN
LAT 49-160N	DAY 30	NO.DPTH 8	WND-DIR 240	WW-CODE 02	
LON 67-565W	HR 22.7	W-COLOR 10	WND-SPD 01	CLD-TPE 2	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 1	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
227	0000	121 B	25926		1957	14865
227	0010	0374 B	29798		2370	14589
227	0020	0317	30515		2432	14576
227	0030	0246	31371		2506	14558
227	0050	0098	31843		2553	14502
227	0075	-0044 B	32264		2594	14447
227	0100	-0031 B	32608		2621	14462
227	0125	0064	33016		2650	14515

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1210 B	25926		1957	14865	0000	00000	8158
0010	0374 B	29798		2370	14589	0062	00002	4202
0020	0317	30515		2432	14576	0101	00008	3613
0030	0246	31371		2506	14558	0134	00016	2911
0050	0098	31843		2553	14502	0188	00038	2457
0075	-0044 B	32264		2594	14447	0245	00074	2068
0100	-0031 B	32608		2621	14462	0294	00117	1809
0125	0064	33016		2650	14515	0336	00165	1544

C-REF-NO 003	YR 1963	DEPTH 92	WAVES 1 06X1	AIR T 14.4	VIS 8
CONS. NO 011	MONTH 7	MXSAMPD 01	WAVES 2 00X0	WET B 10.5	STN
LAT 49-188N	DAY 01	NO.DPTH 7	WND-DIR 060	WW-CODE 02	
LON 67-239W	HR 14.5	W-COLOR 10	WND-SPD 03	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 992.2	CLD-AMT 1	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
145	0000	105 B	29873		2290	14857
145	0010	0914	30056		2326	14810
145	0020	0392	30956		2461	14614
145	0030	0239	31429		2511	14556
145	0050	0091	31864		2556	14499
145	0075	-0041 B	32166		2586	14447
145	0090	-0028	32453		2609	14459

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1050 B	29873		2290	14857	0000	00000	4970
0010	0914	30056		2326	14810	0048	00002	4630
0020	0392	30956		2461	14614	0088	00008	3343
0030	0239	31429		2511	14556	0119	00016	2862
0050	0091	31864		2556	14499	0173	00037	2437
0075	-0041 B	32166		2586	14447	0230	00074	2144

C-REF-NO 003	YR 1963	DEPTH 229	WAVES 1 06X1	AIR T 12.3	VIS 8
CONS. NO 012	MONTH 7	MXSAMPD 02	WAVES 2 06X2	WET B 10.2	STN
LAT 49-179N	DAY 01	NO.DPTH 12	WND-DIR 060	WW-CODE 02	
LON 67-234W	HR 15.5	W-COLOR 20	WND-SPD 04	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1016.2	CLD-AMT 2	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
155	0000	104 B	28999		2224	14842
155	0010	0962	29805		2299	14825
155	0020	0325	31174		2484	14588
155	0030	0262	31349		2503	14565
155	0050	0082	31881		2557	14495
155	0074	-0050 B	32200		2589	14443
155	0099	-0035	32477		2611	14458
155	0124	0046	32951		2645	14506
155	0149	0142 F	33317		2669	14558
155	0174	0274 B	33781		2696	14627
155	0198	0364 F	34128		2715	14674
155	0223	0412	34352		2728	14702

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	28999		2224	14842	0000	00000	5603
0010	0962	29805		2299	14825	0053	00003	4887
0020	0325	31174		2484	14588	0093	00008	3121
0030	0262	31349		2503	14565	0123	00016	2939
0050	0082	31881		2557	14495	0177	00038	2419
0075	-0052 B	32210		2590	14443	0234	00073	2106
0100	-0033	32495		2612	14460	0285	00118	1894
0125	0049	32966		2646	14508	0328	00168	1574
0150	0147 F	33336		2670	14561	0365	00220	1354
0175	0279 B	33798		2697	14629	0396	00271	1107
0200	0368 C	34145		2716	14677	0422	00320	0931
0225	0414	34365		2729	14703	0444	00368	0814

C-REF-NO 003	YR 1963	DEPTH 301	WAVES 1 06X0	AIR T 13.8	VIS 8
CONS. NO 013	MONTH 7	MXSAMPD 03	WAVES 2 06X1	WET B 11.4	STN
LAT 49-171N	DAY 01	NO.DPTH 14	WND-DIR 060	WW-CODE 02	
LON 67-228W	HR 16.3	W-COLOR 20	WND-SPD 03	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1016.2	CLD-AMT 2	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
163	0000	097 B	28713		2213	14813
163	0010	0701	30138		2362	14729
163	0019	0375	31027		2468	14608
163	0029	0295	31252		2493	14578
163	0048	0046	31836		2556	14478
163	0072	-0052 B	32223		2591	14442
163	0097	-0042	32407		2606	14453
163	0121	0004	32814		2636	14484
163	0145	0138 B	33330		2670	14556
163	0169	0261 B	33747		2694	14620
163	0193	0352 D	34082		2713	14668
163	0217	0400	34287		2724	14695
163	0241	0442 E	34488		2736	14719
163	0289	0466 B	34596		2742	14738

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0970 B	28713		2213	14813	0000	00000	5710
0010	0701	30138		2362	14729	0050	00002	4284
0020	0361 C	3107 D		2472	14602	0088	00008	3232
0030	0282 B	3128 B		2496	14573	0119	00016	3004
0050	0031	31880		2560	14472	0174	00037	2395
0075	-0055 B	3225 C		2593	14442	0230	00073	2079
0100	-0040	32449		2609	14456	0280	00118	1927
0125	0024	3290 B		2642	14495	0325	00169	1611
0150	0165 B	33424		2676	14570	0361	00220	1299
0175	0287 B	33841		2699	14634	0391	00270	1082
0200	0369 C	3415 B		2716	14677	0417	00318	0928
0225	0415 B	34360		2728	14703	0439	00366	0820
0250	0448 C	3451 E		2737	14723	0459	00414	0746

C-REF-NO 003	YR 1963	DEPTH 318	WAVES 1 06X1	AIR T 11.8	VIS 8
CONS. NO 014	MONTH 7	MXSAMPD 03	WAVES 2 06X1	WET B 10.1	STN
LAT 49-129N	DAY 01	NO.DPTH 15	WND-DIR 060	WW-CODE 03	
LON 67-199W	HR 17.4	W-COLOR 30	WND-SPD 03	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1015.2	CLD-AMT 3	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
174	0000	105 B	27940		2140	14832
174	0010	0508	28751		2275	14632
174	0020	0272	30318		2420	14554
174	0030	0172	31238		2501	14524
174	0050	-0008	32048		2575	14456
174	0075	-0082 B	32230		2593	14429
174	0100	-0044	32514		2614	14455
174	0125	-0004	32714		2629	14480
174	0150	0130 C	33264		2665	14552
174	0175	0278 B	33794		2696	14629
174	0200	0355 E	34068		2711	14670
174	0225	0400	34249		2721	14695
174	0250	0443 E	34442		2732	14720
174	0300	0472 B	34622		2743	14743
174	0317	0467 B	34624		2744	14744

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1050 B	27940		2140	14832	0000	00000	6405
0010	0508	28751		2275	14632	0058	00003	5114
0020	0272	30318		2420	14554	0102	00009	3728
0030	0172	31238		2501	14524	0136	00017	2961
0050	-0008	32048		2575	14456	0188	00038	2249
0075	-0082 B	32230		2593	14429	0243	00073	2080
0100	-0044	32514		2614	14455	0292	00117	1875
0125	-0004	32714		2629	14480	0338	00169	1739
0150	0130 C	33264		2665	14552	0377	00225	1396
0175	0278 B	33794		2696	14629	0409	00277	1110
0200	0355 E	34068		2711	14670	0435	00327	0976
0225	0400	34249		2721	14695	0459	00378	0887
0250	0443 E	34442		2732	14720	0480	00430	0790
0300	0472 B	34622		2743	14743	0517	00535	0693

C-REF-NO 003	YR 1963	DEPTH 326	WAVES 1 08X2	AIR T 12.5	VIS 8
CONS. NO 015	MONTH 7	MXSAMPD 03	WAVES 2 08X2	WET B 10.4	STN
LAT 49-088N	DAY 01	NO.DPTH 15	WND-DIR 080	WW-CODE 03	
LON 67-171W	HR 18.9	W-COLOR 30	WND-SPD 04	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1013.2	CLD-AMT 5	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	104 B	27743		2126	14826
189	0010	0550 B	29164		2303	14655
189	0020	0273	29845		2382	14548
189	0030	0128	30985		2483	14500
189	0050	-0007	31992		2571	14456
189	0075	-0080 B	32207		2591	14429
189	0100	-0068	32420		2608	14442
189	0125	-0025	32622		2622	14469
189	0150	0066 E	33015		2649	14520
189	0175	0227 B	33583		2684	14604
189	0200	0350 C	34039		2709	14667
189	0225	0384	34180		2717	14688
189	0250	0429	34344		2726	14713
189	0300	0470 B	34624		2743	14742
189	0324	0466 B	34628		2744	14744

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	27743		2126	14826	0000	00000	6536
0010	0550 B	29164		2303	14655	0057	00002	4845
0020	0273	29845		2382	14548	0102	00009	4088
0030	0128	30985		2483	14500	0138	00018	3128
0050	-0007	31992		2571	14456	0193	00040	2292
0075	-0080 B	32207		2591	14429	0248	00075	2098
0100	-0068	32420		2608	14442	0299	00120	1938
0125	-0025	32622		2622	14469	0346	00174	1800
0150	0066 E	33015		2649	14520	0388	00233	1546
0175	0227 B	33583		2684	14604	0423	00291	1226
0200	0350 C	34039		2709	14667	0451	00344	0993
0225	0384	34180		2717	14688	0475	00397	0922
0250	0429	34344		2726	14713	0497	00451	0848
0300	0470 B	34624		2743	14742	0536	00560	0689

C-REF-NO 003	YR 1963	DEPTH 320	WAVES 1 08X2	AIR T 15.0	VIS 8
CONS. NO 016	MONTH 7	MXSAMPD 03	WAVES 2 08X1	WET B 11.0	STN
LAT 49-049N	DAY 01	NO.DPTH 14	WND-DIR 080	WW-CODE 02	
LON 67-143W	HR 19.8	W-COLOR 30	WND-SPD 05	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1012.5	CLD-AMT 6	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	116 B				
198	0010	0334	29303		2335	14565
198	0020	0451	30912		2451	14638
198	0030	0218	31479		2517	14547
198	0050	0094	31846		2554	14500
198	0075	-0016 B	32213		2589	14459
198	0100	-0039	32331		2599	14454
198	0125	-0044	32592		2621	14460
198	0150	0142 D	33315		2669	14559
198	0175	0238 B	33643		2688	14610
198	0200	0328 D	33970		2706	14657
198	0225	0380	34178		2718	14686
198	0250	0429 D	34364		2727	14713
198	0300	0470 B	34618		2743	14742

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1160 B	2729 I		2071	14864	0000	00000	7063
0010	0334	29303		2335	14565	0058	00002	4544
0020	0451	30912		2451	14638	0098	00008	3430
0030	0218	31479		2517	14547	0130	00016	2809
0050	0094	31846		2554	14500	0183	00037	2452
0075	-0016 B	32213		2589	14459	0240	00074	2118
0100	-0039	32331		2599	14454	0292	00120	2017
0125	-0044	32592		2621	14460	0340	00176	1814
0150	0142 D	33315		2669	14558	0380	00231	1366
0175	0238 B	33643		2688	14609	0413	00285	1190
0200	0328 D	33970		2706	14657	0440	00338	1024
0225	0380	34178		2718	14686	0465	00391	0920
0250	0429 D	34364		2727	14713	0487	00445	0833
0300	0470 B	34618		2743	14742	0526	00553	0694

C-REF-NO 003	YR 1963	DEPTH 175	WAVES 1 06X1	AIR T 15.7	VIS 8
CONS. NO 017	MONTH 7	MXSAMPD 02	WAVES 2 08X2	WET B 11.8	STN
LAT 49-008N	DAY 01	NO.DPTH 10	WND-DIR 060	WW-CODE 03	
LON 67-115W	HR 20.6	W-COLOR 20	WND-SPD 06	CLD-TPE 3	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.8	CLD-AMT 6	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
206	0000	128 B	28351		2132	14919
206	0010	1188	29579		2243	14904
206	0020	0410	29865		2372	14607
206	0030	0295	30635		2444	14570
206	0050	0158	31664		2535	14527
206	0075	0013 B	32117		2580	14471
206	0100	-0045	32377		2603	14452
206	0125	-0012	32729		2630	14476
206	0150		33100			
206	0174	0232 E	33220		2655	14601

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1280 B	28351		2132	14919	0000	00000	6483
0010	1188	29579		2243	14904	0060	00003	5417
0020	0410	29865		2372	14607	0108	00010	4182
0030	0295	30635		2444	14570	0146	00020	3505
0050	0158	31664		2535	14526	0208	00044	2629
0075	0013 B	32117		2580	14471	0269	00082	2204
0100	-0045	32377		2603	14452	0322	00129	1980
0125	-0012	32729		2630	14476	0368	00182	1724
0150	0074 C	33100		2656	14525	0409	00239	1486
0175	0240 E	33225		2654	14605	0446	00302	1507

C-REF-NO 003	YR 1963	DEPTH 122	WAVES 1 06X1	AIR T 15.4	VIS 8
CONS. NO 018	MONTH 7	MXSAMPD 01	WAVES 2 06X2	WET B 11.2	STN
LAT 48-594N	DAY 01	NC.DPTH 8	WND-DIR 060	WW-CODE 02	
LON 67-115W	HR 21.2	W-COLOR 30	WND-SPD 06	CLD-TPE 3	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.1	CLD-AMT 6	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
212	0000	122 B	28468		2152	14900
212	0010	1076 C	29569		2262	14864
212	0020	0550	29819		2355	14665
212	0030	0262	30689		2450	14556
212	0050	0178	31670		2535	14536
212	0075	-0006 B	32175		2585	14463
212	0100	-0060	32470		2611	14447
212	0120	0003 E	32776		2633	14483

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1220 B	28468		2152	14900	0000	00000	6292
0010	1076 C	29569		2262	14864	0058	00003	5239
0020	0550	29819		2355	14665	0106	00010	4353
0030	0262	30689		2450	14556	0145	00020	3439
0050	0178	31670		2535	14535	0206	00044	2637
0075	-0006 B	32175		2585	14463	0266	00082	2151
0100	-0060	32470		2611	14446	0317	00127	1903

C-REF-NO 003	YR 1963	DEPTH 90	WAVES 1 05X1	AIR T 15.4	VIS 8
CONS. NO 019	MONTH 7	MXSAMPD 01	WAVES 2 05X1	WET B 11.3	STN
LAT 48-590N	DAY 01	NO.DPTH 7	WND-DIR 050	WW-CODE 02	
LON 67-084W	HR 21.7	W-COLOR 50	WND-SPD 05	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	PARO 1010.1	CLD-AMT 6	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
217	0000	112 B	28475		2170	14865
217	0010	1044	29285		2245	14849
217	0020	0528	29784		2354	14656
217	0030	0457	30443		2414	14636
217	0050	0202	31599		2527	14545
217	0075	-0036 B	32171		2586	14449
217	0089	-0042	32491		2612	14453

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	28475		2170	14865	0000	00000	6119
0010	1044	29285		2245	14849	0058	00003	5399
0020	0528	29784		2354	14656	0107	00010	4356
0030	0457	30443		2414	14636	0148	00020	3790
0050	0202	31599		2527	14545	0213	00046	2707
0075	-0036 B	32171		2586	14449	0274	00084	2142

C-REF-NO 003	YR 1963	DEPTH 33	WAVES 1 08X1	AIR T 11.8	VIS 7
CONS. NO 020	MONTH 7	MXSAMPD 00	WAVES 2 08X1	WET B 09.2	STN
LAT 48-575N	DAY 01	NO.DPTH 4	WND-DIR 080	WW-CODE 02	
LON 67-093W	HR 22.2	W-COLOR 50	WND-SPD 04	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 6	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
222	0000	097 B	28502		2196	14810
222	0010	0552 B	28963		2287	14653
222	0020	0346	29183		2324	14571
222	0030	0264	29858		2384	14546

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0970 B	28502		2196	14810	0000	00000	5867
0010	0552 B	28963		2287	14653	0054	00003	4998
0020	0346	29183		2324	14571	0103	00010	4645
0030	0264	29858		2384	14546	0147	00021	4071

C-REF-NO 003	YR 1963	DEPTH 33	WAVES 1 06X2	AIR T 13.8	VIS 8
CONS. NO 021	MONTH 7	MXSAMPD 00	WAVES 2 06X1	WET B 11.2	STN
LAT 48-575N	DAY 01	NO.DPTH 5	WND-DIR 060	WW-CODE 03	
LON 67-094W	HR 23.6	W-COLOR 40	WND-SPD 02	CLD-TPE 3	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.1	CLD-AMT 7	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
236	0000	103 B	28740		2205	14835
236	0010	0460	28953		2296	14615
236	0015	0346	29216		2327	14570
236	0020	0290	29562		2359	14551
236	0030	0240	30075		2403	14538

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1030 B	28740		2205	14835	0000	00000	5780
0010	0460	28953		2296	14615	0054	00003	4916
0020	0290	29562		2359	14551	0100	00009	4315
0030	0240	30075		2403	14538	0141	00020	3890

C-REF-NO 003	YR 1963	DEPTH 94	WAVES 1 0621	AIR T 14.4	VIS 8
CONS. NO 022	MONTH 7	MXSAMPD 01	WAVES 2 0621	WET B 11.5	STN
LAT 48-590N	DAY 01	NO.DPTH 8	WND-DIR 060	WW-CODE 02	
LON 67-084W	HR 23.9	W-COLOR 30	WND-SPD 02	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	FARD 1009.8	CLD-AMT 7	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
239	0000	110 B	28401		2168	14856
239	0010	0863	29224		2268	14780
239	0015	0769	29942		2338	14754
239	0020	0579	30138		2377	14681
239	0030	0426	30571		2427	14625
239	0050	0206	31472		2517	14545
239	0075	-0028 B	32226		2590	14454
239	0093	-0040	32517		2614	14455

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	28401		2168	14856	0000	00000	6142
0010	0863	29224		2268	14780	0057	00003	5177
0020	0579	30138		2377	14681	0104	00010	4144
0030	0426	30571		2427	14625	0143	00019	3664
0050	0206	31472		2517	14545	0208	00045	2806
0075	-0028 B	32226		2590	14454	0270	00084	2103

C-REF-NO 003	YR 1963	DEPTH 133	WAVES 1 0610	AIR T 15.2	VIS 8
CONS. NO 023	MONTH 7	MXSAMPD 01	WAVES 2 0621	WET B 12.2	STN
LAT 48-594N	DAY 02	NO.DPTH 10	WND-DIR 060	WW-CODE 02	
LON 67-106W	HR 00.5	W-COLOR 20	WND-SPD 02	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 7	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
005	0000	123 B	28151		2126	14900
005	0010	1089 D	29322		2241	14866
005	0015	1003	29709		2285	14840
005	0020	0622	29866		2350	14695
005	0030	0316	30651		2443	14579
005	0050	0137 B	31779		2546	14519
005	0075	-0043	32242		2592	14447
005	0100	-0049	32459		2610	14451
005	0125	C008 B	32809		2636	14487
005	0130	C028 B	32884		2641	14498

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1230 B	28151		2126	14900	0000	00000	6544
0010	1089 D	29322		2241	14866	0060	00003	5443
0020	0622	29866		2350	14695	0109	00010	4396
0030	0316	30651		2443	14579	0149	00020	3509
0050	0137 B	31779		2546	14519	0210	00044	2528
0075	-0043	32242		2592	14447	0268	00080	2085
0100	-0049	32459		2610	14451	0318	00125	1915
0125	C008 B	32809		2636	14487	0363	00177	1672

C-REF-NO 003	YR 1963	DEPTH 191	WAVES 1 0210	AIR T 14.6	VIS 8
CONS. NO 024	MONTH 7	MXSAMPD 02	WAVES 2 0221	WET B 12.6	STN
LAT 49-008N	DAY 02	NO.DPTH 11	WND-DIR 060	WW-CODE 01	
LON 67-115W	HR 01.1	W-COLOR 10	WND-SPD 01	CLD-TPE 3	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 5	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
011	0000	130 B	28401		2132	14927
011	0010	1168	29539		2244	14897
011	0020	0524	30632		2422	14665
011	0030	0301	31231		2490	14580
011	0050	0128	31754		2545	14514
011	0075	0008 B	32108		2579	14469
011	0100	-0046	32400		2605	14452
011	0125	0008	32785		2634	14486
011	0150	0073 D	33048		2652	14524
011	0175	0236 B	33642		2688	14609
011	0188	0302 D	33880		2701	14643

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300 B	28401		2132	14927	0000	00000	6482
0010	1168	29539		2244	14897	0060	00003	5413
0020	0524	30632		2422	14665	0105	00009	3714
0030	0301	31231		2490	14580	0139	00018	3058
0050	0128	31754		2545	14514	0196	00040	2542
0075	0008 B	32108		2579	14469	0256	00078	2209
0100	-0046	32400		2605	14452	0308	00125	1962
0125	0008	32785		2634	14486	0354	00177	1690
0150	0073 D	33048		2652	14524	0395	00234	1525
0175	0236 B	33642		2688	14609	0429	00291	1189

C-REF-NO 003	YR 1963	DEPTH 323	WAVES 1 49XX	AIR T 14.0	VIS 8
CONS. NO 025	MONTH 7	MXSAMPD 03	WAVES 2 49XX	WET B 11.7	STN
LAT 49-049N	DAY 02	NO.DPTH 15	WND-DIR 060	WW-CODE 02	
LON 67-143W	HR 02.0	W-COLOR 00	WND-SPD 03	CLD-TPE 3	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 5	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
020	0000	108 B	27454		2097	14837
020	0010	0376	29251		2327	14583
020	0020	0386	31042		2468	14613
020	0030	0150	31701		2539	14520
020	0050	0048	32002		2569	14482
020	0075	-0025 B	32216		2589	14455
020	0100	-0060	32459		2610	14446
020	0125	-0006	32755		2632	14480
020	0150	0128 D	33269		2666	14552
020	0175	0238 B	33645		2688	14610
020	0200	0320 D	33943		2705	14653
020	0225	0392	34212		2719	14692
020	0250	0428 E	34363		2727	14713
020	0300	0470 B	34622		2743	14742
020	0322	0466 B	34624		2744	14744

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	27454		2097	14837	0000	00000	6813
0010	0376	29251		2327	14583	0057	00002	4617
0020	0386	31042		2468	14613	0097	00008	3272
0030	0150	31701		2539	14520	0126	00015	2596
0050	0048	32002		2569	14481	0176	00035	2309
0075	-0025 B	32216		2589	14455	0231	00071	2112
0100	-0060	32459		2610	14446	0282	00116	1911
0125	-0006	32755		2632	14480	0328	00168	1707
0150	0128 D	33269		2666	14552	0367	00223	1391
0175	0238 B	33645		2688	14610	0399	00276	1188
0200	0320 D	33943		2705	14653	0427	00330	1036
0225	0392	34212		2719	14692	0452	00383	0906
0250	0428 E	34363		2727	14713	0474	00437	0833
0300	0470 B	34622		2743	14742	0512	00544	0691

C-REF-NO 003	YR 1963	DEPTH 330	WAVES 1 03X1	AIR T 12.8	VIS 8
CONS. NO 026	MONTH 7	MXSAMPD 03	WAVES 2 03X1	WET B 10.6	STN
LAT 49-088N	DAY 02	NO.DPTH 15	WND-DIR 030	WW-CODE 03	
LON 67-171W	HR 03.2	W-COLOR 40	WND-SPD 03	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 7	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
032	0000	107 B	27254		2084	14831
032	0010	0387	29539		2349	14591
032	0020	0192	30814		2465	14525
032	0030	0242	31555		2521	14559
032	0050	-0016	32076		2578	14453
032	0075	-0070 B	32295		2598	14435
032	0100	-0073	32439		2609	14440
032	0124	-0012	32720		2630	14476
032	0149	0090	33173		2661	14533
032	0174	0214 B	33568		2684	14598
032	0199	0320 D	33949		2705	14653
032	0224	0393	34216		2719	14692
032	0249	0430 D	34381		2728	14714
032	0298	0472 B	34634		2744	14743
032	0325	0452 B	34640		2747	14739

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1070 B	27254		2084	14831	0000	00000	6946
0010	0387	29539		2349	14591	0057	00002	4409
0020	0192	30814		2465	14525	0096	00008	3297
0030	0242	31555		2521	14559	0126	00016	2768
0050	-0016	32076		2578	14453	0176	00036	2224
0075	-0070 B	32295		2598	14435	0230	00070	2034
0100	-0073	32439		2609	14440	0280	00114	1922
0125	-0009	32737		2631	14478	0326	00167	1719
0150	0095	33189		2662	14536	0365	00222	1430
0175	0219 B	33584		2685	14600	0399	00277	1219
0200	0324 D	33962		2706	14655	0427	00332	1026
0225	0395	34224		2720	14693	0451	00384	0900
0250	0432 D	34388		2729	14715	0473	00437	0818
0300	0466 C	3462 E		2743	14740	0511	00544	0690

C-REF-NO 003	YR 1963	DEPTH 320	WAVES 1 0310	AIR T 12.1	VIS 8
CONS. NO 027	MONTH 7	MXSAMPD 03	WAVES 2 0322	WET B 10.1	STN
LAT 49-129N	DAY 02	NO.DPTH 15	WND-DIR 030	WW-CODE 03	
LON 67-199W	HR 04.2	W-COLOR 40	WND-SPD 03	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.1	CLD-AMT 7	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
042	0000	088 B	27108		2101	14758
042	0010	0282	29900		2386	14551
042	0020	0170	30614		2451	14513
042	0030	0132	31279		2506	14506
042	0050	0014	32003		2571	14466
042	0075	-0077 B	32227		2592	14431
042	0100	-0050	32501		2613	14452
042	0125	0018	32824		2636	14492
042	0150	0151 C	33365		2672	14563
042	0175	0284 B	33823		2698	14632
042	0199	0370 E	34114		2713	14677
042	0224	0410	34298		2724	14700
042	0249	0457 D	34543		2738	14727
042	0299	0470 B	34624		2743	14742
042	0316	0466 B	34623		2744	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0880 B	27108		2101	14758	0000	00000	6779
0010	0282	29900		2386	14551	0054	00002	4053
0020	0170	30614		2451	14513	0092	00008	3435
0030	0132	31279		2506	14506	0124	00016	2906
0050	0014	32003		2571	14466	0176	00037	2293
0075	-0077 B	32227		2592	14431	0231	00071	2084
0100	-0050	32501		2613	14452	0281	00116	1883
0125	0018	32824		2636	14492	0326	00167	1666
0150	0151 C	33365		2672	14563	0364	00220	1334
0175	0284 B	33823		2698	14632	0394	00270	1093
0200	0372 E	34122		2714	14678	0420	00320	0952
0225	0412	34309		2725	14701	0443	00369	0855
0250	0458 D	34548		2739	14728	0463	00418	0727
0300	0475 B	3465 F		2745	14744	0498	00517	0673

C-REF-NO 003	YR 1963	DEPTH 294	WAVES 1 06X0	AIR T 12.8	VIS 8
CONS. NO 028	MONTH 7	MXSAMPD 03	WAVES 2 05X2	WET B 10.2	STN
LAT 49-171N	DAY 02	NO.DPTH 14	WND-DIR 060	WW-CODE 13	
LON 67-228W	HR 05.1	W-COLOR 40	WND-SPD 04	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.8	CLD-AMT 7	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
051	0000	113 B	29138		2219	14876
051	0010	0711	30066		2355	14732
051	0020	0363	31100		2475	14604
051	0030	0290	31281		2495	14576
051	0050	0014	31926		2564	14465
051	0075	-0087 B	32249		2594	14427
051	0100	-0048	32535		2616	14453
051	0125	0032	32918		2643	14499
051	0150	0222 D	33601		2686	14598
051	0175	0321 B	33969		2707	14650
051	0199	0370 E	34125		2714	14677
051	0224	0416	34349		2727	14703
051	0249	0459 D	34573		2740	14728
051	0289	0463 B	34597		2742	14737

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1130 B	29138		2219	14876	0000	00000	5644
0010	0711	30066		2355	14732	0050	00002	4350
0020	0363	31100		2475	14604	0088	00008	3208
0030	0290	31281		2495	14576	0119	00016	3012
0050	0014	31926		2564	14465	0173	00037	2351
0075	-0087 B	32249		2594	14427	0229	00072	2064
0100	-0048	32535		2616	14453	0278	00116	1858
0125	0032	32918		2643	14499	0322	00166	1601
0150	0222 D	33601		2686	14598	0357	00215	1208
0175	0321 B	33969		2707	14650	0385	00262	1016
0200	0372 E	34133		2715	14678	0410	00309	0943
0225	0418	34360		2728	14705	0432	00358	0823
0250	0454 C	3454 H		2739	14726	0452	00405	0727

C-REF-NO 003	YR 1963	DEPTH 229	WAVES 1 06X0	AIR T 12.8	VIS 8
CONS. NO 029	MONTH 7	MXSAMPD 02	WAVES 2 06X2	WET B 09.8	STN
LAT 49-180N	DAY 02	NO.DPTH 13	WND-DIR 060	WW-CODE 13	
LON 67-234W	HR 05.9	W-CCLOR 40	WND-SPD 05	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 7	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
059	0000	114 B	29529		2248	14885
059	0010	0920	29884		2311	14810
059	0015	0970	30418		2345	14837
059	0020	0342	31161		2481	14595
059	0030	0192	31616		2529	14538
059	0050	0102 B	31805		2550	14503
059	0075	-0057	32211		2590	14440
059	0100	-0038	32547		2617	14458
059	0125	0089 B	33087		2654	14527
059	0150	0246 B	33695		2691	14610
059	0175	0306 E	33885		2701	14642
059	0199	0366	34149		2717	14675
059	0224	0419 E	34356		2728	14705

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1140 B	29529		2248	14885	0000	00000	5371
0010	0920	29884		2311	14810	0051	00002	4766
0020	0342	31161		2481	14595	0091	00008	3144
0030	0192	31616		2529	14538	0120	00016	2687
0050	0102 B	31805		2550	14503	0172	00037	2488
0075	-0057	32211		2590	14440	0230	00073	2103
0100	-0038	32547		2617	14458	0280	00117	1853
0125	0089 B	33087		2654	14527	0322	00166	1505
0150	0246 B	33695		2691	14610	0355	00212	1156
0175	0306 E	33885		2701	14642	0383	00259	1066
0200	0366 C	3413 E		2715	14676	0409	00307	0938
0225	0421 E	34365		2728	14706	0431	00355	0822

C-REF-NO 003	YR 1963	DEPTH 110	WAVES 1 06X0	AIR T 12.1	VIS 7
CONS. NO 030	MONTH 7	MXSAMPD 01	WAVES 2 06X1	WET B 09.2	STN
LAT 49-188N	DAY 02	NO.DPTH 8	WND-DIR 060	WW-CODE 61	
LON 67-240W	HR 06.8	W-COLOR 40	WND-SPD 01	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	PARO 1007.1	CLD-AMT 8	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
068	0000	100 B	29707		2285	14836
068	0010	0908	29890		2314	14806
068	0015	0704	30170		2364	14731
068	0020	0388 B	31003		2465	14613
068	0030	0200 B	31551		2524	14540
068	0050	0144	31721		2541	14521
068	0075	-0036	32165		2586	14449
068	0100	-0021	32579		2619	14466

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1000 B	29707		2285	14836	0000	00000	5016
0010	0908	29890		2314	14806	0049	00002	4745
0020	0388 B	31003		2465	14613	0089	00008	3303
0030	0200 B	31551		2524	14540	0120	00016	2742
0050	0144	31721		2541	14521	0173	00038	2577
0075	-0036	32165		2586	14449	0233	00075	2147
0100	-0021	32579		2619	14466	0283	00119	1835

C-REF-NO 003	YR 1963	DEPTH	90	WAVES 1 00X0	AIR T 12.5	VIS 7
CONS. NO 031	MONTH 7	MXSAMPD	01	WAVES 2 00X0	WET B 11.5	STN
LAT 49-188N	DAY 02	NO.DPTH	8	WND-DIR CALM	WW-CODE 21	
LON 67-240W	HR 09.2	W-COLOR	20	WND-SPD 00	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 1005.0	CLD-AMT 8	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
092	0000	108 B	29604		2264	14864
092	0010	1027	29685		2279	14848
092	0015	0986	29782		2293	14835
092	0020	0682	30248		2373	14724
092	0030	0263 B	31338		2502	14565
092	0050	0092 B	31846		2554	14499
092	0075	-0042	32274		2595	14448
092	0088	-0040	32441		2608	14453

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	29604		2264	14864	0000	00000	5218
0010	1027	29685		2279	14848	0052	00003	5075
0020	0682	30248		2373	14724	0098	00010	4180
0030	0263 B	31338		2502	14565	0134	00018	2948
0050	0092 B	31846		2554	14499	0188	00040	2451
0075	-0042	32274		2595	14448	0245	00076	2061

C-REF-NO 003	YR 1963	DEPTH 259	WAVES 1 49XX	AIR T 12.5	VIS 7
CONS. NO 032	MONTH 7	MXSAMPD 03	WAVES 2 0710	WET B 11.4	STN
LAT 49-180N	DAY 02	NO.DPTH 15	WND-DIR 310	WW-CODE 02	
LON 67-234W	HR 10.1	W-COLOR 20	WND-SPD 01	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1004.7	CLD-AMT 8	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
101	0000	090 B	27356		2117	14769
101	0010	1116	29448		2246	14877
101	0015	1053	29641		2271	14857
101	0020	0522	30694		2427	14665
101	0030	0336	31176		2483	14595
101	0050	0058 B	31770		2550	14483
101	0075	-0082	32270		2596	14429
101	0100	-0031	32592		2620	14462
101	0125	0104 E	33130		2656	14535
101	0150	0220 B	33597		2686	14597
101	0175	0300 F	33866		2700	14639
101	0200	0352	34098		2714	14669
101	0225	0428 D	34384		2729	14709
101	0250	0459 B	34562		2740	14728
101	0257	0458 B	34572		2741	14729

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0900 B	27356		2117	14769	0000	00000	6621
0010	1116	29448		2246	14877	0060	00003	5393
0020	0522	30694		2427	14665	0106	00009	3665
0030	0336	31176		2483	14595	0140	00018	3128
0050	0058 B	31770		2550	14483	0196	00040	2491
0075	-0082	32270		2596	14429	0254	00076	2050
0100	-0031	32592		2620	14462	0302	00120	1821
0125	0104 E	33130		2656	14535	0344	00167	1481
0150	0220 B	33597		2686	14597	0378	00214	1209
0175	0300 F	33866		2700	14639	0406	00262	1075
0200	0352	34098		2714	14669	0432	00311	0950
0225	0428 D	34384		2729	14709	0454	00359	0815
0250	0459 B	34562		2740	14728	0474	00406	0718

C-REF-NO 003	YR 1963	DEPTH 295	WAVES 1 17X0	AIR T 12.9	VIS 7
CONS. NO 033	MONTH 7	MXSAMPD 03	WAVES 2 04X1	WET B 11.7	STN
LAT 49-171N	DAY 02	NO.DPTH 14	WND-DIR 170	WW-CODE 02	
LON 67-228W	HR 10.9	W-COLOR 20	WND-SPD 01	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1004.4	CLD-AMT 8	HW 7

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
109	0000	114 B	27826		2116	14864
109	0010	1036	29649		2275	14850
109	0020	0558	30571		2413	14678
109	0030	0216	31083		2485	14541
109	0050	0027	31925		2564	14471
109	0074	-0080 B	32259		2595	14430
109	0099	-0023	32654		2625	14466
109	0124	0049	32982		2648	14508
109	0149	0186 F	33462		2677	14580
109	0174	0296 B	33892		2703	14638
109	0199	0364 D	34115		2714	14674
109	0224	0394	34246		2721	14693
109	0248	0344 E	34463		2744	14678
109	0291	0467 B	34586		2741	14739

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1140 B	27826		2116	14864	0000	00000	6633
0010	1036	29649		2275	14850	0059	00003	5116
0020	0558	30571		2413	14678	0104	00009	3796
0030	0216	31083		2485	14541	0138	00018	3108
0050	0027	31925		2564	14471	0193	00040	2358
0075	-0080 B	32275		2596	14431	0249	00075	2047
0100	-0021	32666		2626	14467	0297	00117	1769
0125	0054	33000		2649	14510	0339	00165	1550
0150	0191 F	33482		2679	14583	0374	00215	1274
0175	0299 B	33904		2703	14640	0403	00263	1046
0200	0366 D	34120		2714	14675	0429	00311	0947
0225	0392	34255		2722	14692	0451	00361	0874
0250	0385 I	3443 I		2737	14696	0472	00411	0741

C-REF-NO 003	YR 1963	DEPTH 319	WAVES 1 49X0	AIR T 12.8	VIS 7
CONS. NO 034	MONTH 7	MXSAMPD 03	WAVES 2 49X1	WET B 11.0	STN
LAT 49-129N	DAY 02	NO.DPTH 15	WND-DIR 110	WW-CODE 01	
LON 67-199W	HR 12.0	W-COLOR 30	WND-SPD 01	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1003.3	CLD-AMT 7	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
120	0000	113 B	26733		2033	14846
120	0010	0498	29167		2309	14633
120	0020	0209	30591		2446	14530
120	0030	0154	31186		2498	14515
120	0050	0022	31973		2568	14469
120	0075	-0070 B	32292		2597	14435
120	0100	-0036	32451		2609	14457
120	0125	0018	32826		2637	14492
120	0150	0127 D	33257		2665	14551
120	0175	0274 B	33780		2696	14627
120	0200	0350 D	34052		2710	14668
120	0225	0390	34214		2719	14691
120	0250	0432 C	34401		2730	14715
120	0300	0468 B	34609		2742	14741
120	0316	0466 B	34627		2744	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1130 B	26733		2033	14846	0000	00000	7428
0010	0498	29167		2309	14633	0061	00002	4791
0020	0209	30591		2446	14530	0103	00008	3477
0030	0154	31186		2498	14515	0135	00017	2990
0050	0022	31973		2568	14469	0189	00038	2319
0075	-0070 B	32292		2597	14435	0243	00073	2037
0100	-0036	32451		2609	14457	0293	00117	1927
0125	0018	32826		2637	14492	0339	00169	1664
0150	0127 D	33257		2665	14551	0377	00223	1399
0175	0274 B	33780		2696	14627	0409	00275	1117
0200	0350 D	34052		2710	14667	0435	00326	0983
0225	0390	34214		2719	14691	0459	00378	0903
0250	0432 C	34401		2730	14715	0481	00430	0809
0300	0468 B	34609		2742	14741	0519	00537	0698

C-REF-NO 003	YR 1963	DEPTH 329	WAVES 1 00X0	AIR T 14.3	VIS 7
CONS. NO 035	MONTH 7	MXSAMPD 03	WAVES 2 49X1	WET B 12.4	STN
LAT 49-088N	DAY 02	NO.DPTH 15	WND-DIR CALM	WW-CODE 02	
LON 67-171W	HR 12.9	W-COLOR 30	WND-SPD 00	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1004.7	CLD-AMT 7	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
129	0000	113 B	26657		2028	14846
129	0010	0343	29439		2345	14571
129	0020	0283	30267		2415	14558
129	0030	0130	31318		2510	14506
129	0050	-0050	32122		2583	14438
129	0075	-0045 B	32302		2597	14447
129	0100	-0041	32386		2604	14454
129	0125	-0016	32674		2626	14474
129	0150	0114 D	33213		2662	14545
129	0175	0258 B	33727		2693	14619
129	0200	0318 E	33913		2702	14652
129	0225	0370	34138		2715	14681
129	0250	0417 D	34314		2725	14708
129	0300	0472 B	34627		2743	14743
129	0326	0468 B	34630		2744	14746

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1130 B	26657		2028	14846	0000	00000	7484
0010	0343	29439		2345	14571	0060	00002	4448
0020	0283	30267		2415	14558	0101	00008	3775
0030	0130	31318		2510	14506	0135	00017	2875
0050	-0050	32122		2583	14438	0185	00037	2176
0075	-0045 B	32302		2597	14447	0238	00071	2038
0100	-0041	32386		2604	14454	0289	00116	1974
0125	-0016	32674		2626	14474	0336	00170	1764
0150	0114 D	33213		2662	14545	0376	00226	1424
0175	0258 B	33727		2693	14619	0408	00279	1143
0200	0318 E	33913		2702	14652	0436	00333	1057
0225	0370	34138		2715	14681	0461	00387	0940
0250	0417 D	34314		2725	14708	0484	00442	0858
0300	0472 B	34627		2743	14743	0523	00552	0689

C-REF-NO 003	YR 1963	DEPTH 321	WAVES 1 49X0	AIR T 14.8	VIS 8
CONS. NO 036	MONTH 7	MXSAMPD 02	WAVES 2 49X1	WET B 13.6	STN
LAT 49-049N	DAY 02	NO.DPTH 12	WND-DIR 110	WW-CODE 01	
LON 67-143W	HR 13.8	W-COLOR 30	WND-SPD 01	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1003.7	CLD-AMT 5	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
138	0000	106 B	27252		2085	14827
138	0010	0500 I	28541		2259	14626
138	0020	0198	30420		2433	14522
138	0030	0230	31100		2485	14547
138	0050	0048	31914		2562	14480
138	0074	-0078 B	32176		2588	14430
138	0099	-0076	32365		2603	14437
138	0124	-0026	32654		2625	14469
138	0149	0120	33147		2657	14546
138	0174	0202 B	33473		2677	14591
138	0199	0302 F	33826		2697	14644
138	0224	0376	33875		2694	14680

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1060 B	27252		2085	14827	0000	00000	6932
0010	0500 I	28541		2259	14626	0061	00003	5265
0020	0198	30420		2433	14522	0106	00009	3600
0030	0230	31100		2485	14547	0139	00018	3105
0050	0048	31914		2562	14480	0194	00039	2377
0075	-0080 B	32183		2589	14429	0251	00075	2117
0100	-0075	32374		2604	14438	0302	00121	1971
0125	-0020	32673		2626	14472	0349	00175	1762
0150	0124	33161		2658	14548	0390	00232	1470
0175	0206 B	33490		2678	14593	0425	00289	1280
0200	0298 D	3378 I		2693	14641	0455	00348	1141
0225	0379	33876		2694	14682	0484	00411	1145

C-REF-NO 003	YR 1963	DEPTH 186	WAVES 1 49X0	AIR T 14.8	VIS 8
CONS. NO 037	MONTH 7	MXSAMPD 02	WAVES 2 49X1	WET B 13.8	STN
LAT 49-008N	DAY 02	NO.DPTH 11	WND-DIR 070	WW-CODE 01	
LON 67-115W	HR 14.6	W-COLOR 30	WND-SPD 01	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1003.0	CLD-AMT 4	HW 11

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
146	0000	129 B	27338		2052	14910
146	0010	0442	28764		2282	14604
146	0020	0728	30203		2363	14742
146	0030	0341	31139		2480	14596
146	0050	0139	31736		2542	14519
146	0075	-0001 B	32128		2581	14465
146	0100	-0038	32431		2607	14456
146	0125	0038	32893		2641	14502
146	0150	0099 E	33149		2658	14537
146	0175	0276 B	33784		2696	14628
146	0185	0300 D	33867		2700	14641

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1290 B	27338		2052	14910	0000	00000	7250
0010	0442	28764		2282	14604	0062	00003	5043
0020	0728	30203		2363	14742	0108	00010	4270
0030	0341	31139		2480	14596	0146	00019	3161
0050	0139	31736		2542	14519	0203	00042	2562
0075	-0001 B	32128		2581	14465	0263	00079	2189
0100	-0038	32431		2607	14456	0315	00126	1941
0125	0038	32893		2641	14502	0360	00177	1623
0150	0099 E	33149		2658	14537	0399	00231	1463
0175	0276 B	33784		2696	14628	0431	00285	1115

C-REF-NO 003	YR 1963	DEPTH 129	WAVES 1 06X0	AIR T 15.8	VIS 7
CONS. NO 038	MONTH 7	MXSAMPD 01	WAVES 2 06X1	WET B 13.4	STN
LAT 48-594N	DAY 02	NO.DPTH 9	WND-DIR 060	WW-CODE 05	
LON 67-106W	HR 15.3	W-COLOR 40	WND-SPD 01	CLD-TPE 2	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1003.0	CLD-AMT 3	HW 11

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
153	0000	125 B	27707		2088	14901
153	0010	1098	29553		2257	14872
153	0015	0680	29748		2334	14716
153	0020	0240	30152		2409	14537
153	0030	0202	31525		2521	14541
153	0050	0238 B	32060		2561	14567
153	0075	-0038	32420		2606	14452
153	0100	-0014	32717		2629	14471
153	0123	0100 F				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1250 B	27707		2088	14901	0000	00000	6907
0010	1098	29553		2257	14872	0061	00003	5286
0020	0240	30152		2409	14537	0107	00009	3831
0030	0202	31525		2521	14541	0140	00018	2763
0050	0238 B	32060		2561	14567	0192	00038	2383
0075	-0038	32420		2606	14452	0246	00073	1951
0100	-0014	32717		2629	14471	0293	00114	1733
0125	0121 G							

C-REF-NO 003	YR 1963	DEPTH 91	WAVES 1 06X0	AIR T 15.6	VIS 7
CONS. NO 039	MONTH 7	MXSAMPD 01	WAVES 2 06X1	WET B 13.8	STN
LAT 48-590N	DAY 02	NO.DPTH 8	WND-DIR 060	WW-CODE 05	
LON 67-084W	HR 15.8	W-COLOR 40	WND-SPD 01	CLD-TPE 2	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1002.7	CLD-AMT 3	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
158	0000	132 B	28800		2159	14939
158	0010	1169	29489		2240	14896
158	0015	0898	29287		2268	14795
158	0020	0736	29846		2334	14741
158	0030	0266	30223		2413	14551
158	0050	0231	31536		2520	14557
158	0075	-0032	32207		2589	14452
158	0088	-0030 E	32571		2618	14460

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1320 B	28800		2159	14939	0000	00000	6224
0010	1169	29489		2240	14896	0059	00003	5451
0020	0736	29846		2334	14741	0109	00010	4547
0030	0266	30223		2413	14551	0151	00021	3796
0050	0231	31536		2520	14557	0217	00047	2775
0075	-0032	32207		2589	14452	0278	00085	2116

C-REF-NO 003	YR 1963	DEPTH 44	WAVES 1 07X1	AIR T 16.4	VIS 7
CONS. NO 040	MONTH 7	MXSAMPD 00	WAVES 2 07X2	WET B 13.8	STN
LAT 48-575N	DAY 02	NO.DPTH 6	WND-DIR 070	WW-CODE 03	
LON 67-093W	HR 16.4	W-COLOR 30	WND-SPD 04	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1002.7	CLD-AMT 4	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
164	0000	133 B	28651		2146	14940
164	0010	1128	28612		2179	14871
164	0015	1034	28942		2220	14842
164	0020	0946	29600		2285	14818
164	0030	0310	29693		2367	14563
164	0043	0235 B	30157		2410	14539

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1330 B	28651		2146	14940	0000	00000	6352
0010	1128	28612		2179	14871	0062	00003	6032
0020	0946	29600		2285	14818	0117	00011	5017
0030	0310	29693		2367	14563	0164	00023	4230

C-REF-NO 003	YR 1963	DEPTH 42	WAVES 1 06X1	AIR T 16.4	VIS 7
CONS. NO 041	MONTH 7	MXSAMPD 00	WAVES 2 06X2	WET B 14.4	STN
LAT 48-575N	DAY 02	NO.DPTH 6	WND-DIR 060	WW-CODE 15	
LON 67-093W	HR 19.5	W-COLOR 30	WND-SPD 05	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 997.6	CLD-AMT 6	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
195	0000	127 B	28488		2144	14918
195	0010	0906	29541		2287	14801
195	0015	0461	29154		2311	14618
195	0020	0295	29535		2356	14553
195	0030	0214	30338		2426	14530
195	0039	0212 B	30880		2469	14538

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1270 B	28488		2144	14918	0000	00000	6364
0010	0906	29541		2287	14801	0057	00003	5002
0020	0295	29535		2356	14553	0104	00010	4339
0030	0214	30338		2426	14530	0144	00020	3673

C-REF-NO 003	YR 1963	DEPTH 91	WAVES 1 06X1	AIR T 15.8	VIS 7
CONS. NO 042	MONTH 7	MXSAMPD 01	WAVES 2 0622	WET B 14.4	STN
LAT 48-590N	DAY 02	NO.DPTH 8	WND-DIR 060	WW-CODE 01	
LON 67-084W	HR 19.9	W-COLOR 30	WND-SPD 05	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 997.6	CLD-AMT 5	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	133 B	28775		2155	14942
199	0010	1202 C	29286		2218	14905
199	0015	0784 B	29807		2325	14758
199	0020	0601	30284		2386	14692
199	0030	0361	30704		2443	14599
199	0050	0142 B	31728		2542	14520
199	0075	-0021	32224		2590	14457
199	0088	-0046	32506		2614	14452

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1330 B	28775		2155	14942	0000	00000	6261
0010	1202 C	29286		2218	14905	0060	00003	5658
0020	0601	30284		2386	14692	0109	00010	4058
0030	0361	30704		2443	14599	0147	00020	3506
0050	0142 B	31728		2542	14520	0208	00044	2570
0075	-0021	32224		2590	14457	0266	00081	2108

C-REF-NO 003	YR 1963	DEPTH 132	WAVES 1 04X1	AIR T 15.2	VIS 7
CONS. NO 043	MONTH 7	MXSAMPD 01	WAVES 2 0422	WET B 14.8	STN
LAT 48-594N	DAY 02	NO.DPTH 9	WND-DIR 040	WW-CODE 03	
LON 67-106W	HR 20.7	W-COLOR 30	WND-SPD 04	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 997.6	CLD-AMT 7	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
207	0000	121 B	27492		2078	14884
207	0005	1157	29543		2246	14892
207	0010	0915	29940		2317	14809
207	0015	0382	31029		2467	14610
207	0020	0318	31164		2484	14585
207	0030	0223 B	31247		2498	14546
207	0050	0105	31862		2555	14505
207	0075	-0072	32195		2590	14433
207	0100	-0010	32676		2626	14473

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1210 B	27492		2078	14884	0000	00000	6997
0010	0915	29940		2317	14809	0059	00002	4718
0020	0318	31164		2484	14585	0098	00008	3122
0030	0223 B	31247		2498	14546	0129	00016	2988
0050	0105	31862		2555	14505	0184	00038	2446
0075	-0072	32195		2590	14433	0241	00074	2110
0100	-0010	32676		2626	14472	0290	00117	1766

C-REF-NO 003	YR 1963	DEPTH 179	WAVES 1 04X0	AIR T 13.9	VIS 7
CONS. NO 044	MONTH 7	MXSAMPD 02	WAVES 2 10X2	WET B 12.7	STN
LAT 49-008N	DAY 02	NO.DPTH 10	WND-DIR 040	WW-CODE 16	
LON 67-115W	HR 21.4	W-COLOR 30	WND-SPD 04	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 996.6	CLD-AMT 8	HW 5

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
214	0000	116 B	27588		2094	14868
214	0010	0832 I	28196		2193	14755
214	0020	0617	30447		2397	14701
214	0030	0280	31279		2496	14572
214	0050	0097	31869		2556	14502
214	0075	-0015 B	32186		2587	14459
214	0100	-0060	32457		2610	14446
214	0125	0044	32949		2645	14505
214	0150	0198 F	33501		2680	14586
214	0175	0299 B	33873		2701	14639

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1160 B	27588		2094	14868	0000	00000	6842
0010	0832 I	28196		2193	14755	0064	00003	5903
0020	0617	30447		2397	14701	0113	00010	3954
0030	0280	31279		2496	14572	0148	00019	3006
0050	0097	31869		2556	14502	0203	00041	2437
0075	-0015 B	32186		2587	14459	0261	00077	2139
0100	-0060	32457		2610	14446	0312	00122	1913
0125	0044	32949		2645	14505	0356	00173	1584
0150	0198 F	33501		2680	14586	0392	00223	1265
0175	0299 B	33873		2701	14639	0421	00271	1068

C-REF-NO 003	YR 1963	DEPTH 321	WAVES 1 04X1	AIR T 12.8	VIS 6
CONS. NO 045	MONTH 7	MXSAMPD 03	WAVES 2 0422	WET B 12.3	STN
LAT 49-049N	DAY 02	NO.DPTH 15	WND-DIR 040	WW-CODE 29	
LON 67-143W	HR 22.3	W-COLOR 30	WND-SPD 08	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 995.6	CLD-AMT 8	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
223	0000	121 B	26705		2018	14875
223	0010	0317	29624		2361	14562
223	0020	0293	30159		2406	14561
223	0030	0192	30887		2471	14528
223	0050	0018	31995		2570	14468
223	0075	-0037	32267		2594	14450
223	0100	-0065	32435		2609	14444
223	0125	-0003	32761		2632	14481
223	0150	0129 B	33255		2665	14552
223	0175	0234 B	33636		2688	14608
223	0200	0342	34027		2709	14664
223	0225	0406	34260		2721	14698
223	0250	0437 D	34412		2730	14717
223	0300	0469 B	34633		2744	14742
223	0318	0467 B	34587		2741	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1210 B	26705		2018	14875	0000	00000	7580
0010	0317	29624		2361	14562	0059	00002	4288
0020	0293	30159		2406	14561	0100	00008	3864
0030	0192	30887		2471	14528	0136	00017	3241
0050	0018	31995		2570	14468	0192	00039	2301
0075	-0037	32267		2594	14450	0247	00074	2068
0100	-0065	32435		2609	14444	0297	00119	1928
0125	-0003	32761		2632	14481	0343	00171	1704
0150	0129 B	33255		2665	14552	0382	00226	1402
0175	0234 B	33636		2688	14608	0415	00280	1192
0200	0342	34027		2709	14664	0442	00333	0994
0225	0406	34260		2721	14698	0466	00384	0885
0250	0437 D	34412		2730	14717	0487	00436	0806
0300	0469 B	34633		2744	14742	0525	00541	0682

C-REF-NO 003	YR 1963	DEPTH 328	WAVES 1 03X1	AIR T 12.8	VIS 5
CONS. NO 046	MONTH 7	MXSAMPD 03	WAVES 2 0432	WET B 12.0	STN
LAT 49-088N	DAY 02	NO.DPTH 15	WND-DIR 030	WW-CODE 60	
LON 67-171W	HR 23.4	W-COLOR 30	WND-SPD 07	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 995.6	CLD-AMT 8	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
234	0000	121 B	27046		2044	14879
234	0010	0352	29478		2347	14576
234	0020	0236	30146		2409	14536
234	0030	0223	31341		2505	14548
234	0050	-0030	32073		2578	14447
234	0075	-0078 B	32190		2589	14430
234	0100	-0078	32354		2603	14436
234	0125	-0022	32634		2623	14471
234	0150	0080 C	33089		2654	14528
234	0175	0226 B	33649		2689	14604
234	0200	0351 E	34041		2709	14668
234	0225	0389	34206		2719	14690
234	0250	0430 B	34387		2729	14714
234	0300	0468 B	34629		2744	14741
234	0325	0467 B	34635		2745	14745

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1210 B	27046		2044	14879	0000	00000	7327
0010	0352	29478		2347	14575	0059	00002	4426
0020	0236	30146		2409	14536	0100	00008	3833
0030	0223	31341		2505	14548	0134	00017	2917
0050	-0030	32073		2578	14447	0186	00037	2221
0075	-0078 B	32190		2589	14430	0241	00072	2112
0100	-0078	32354		2603	14436	0292	00118	1985
0125	-0022	32634		2623	14470	0340	00173	1792
0150	0080 C	33089		2654	14528	0381	00231	1498
0175	0226 B	33649		2689	14604	0415	00286	1176
0200	0351 E	34041		2709	14668	0442	00339	0992
0225	0389	34206		2719	14690	0466	00391	0908
0250	0430 B	34387		2729	14714	0488	00444	0817
0300	0468 B	34629		2744	14741	0526	00550	0683

C-REF-NO 003	YR 1963	DEPTH 320	WAVES 1 0223	AIR T 11.9	VIS 5
CONS. NO 047	MONTH 7	MXSAMPD 03	WAVES 2 0235	WET B 11.4	STN
LAT 49-129N	DAY 03	NO.DPTH 15	WND-DIR 020	WW-CODE 25	
LON 67-199W	HR 00.4	W-COLOR 30	WND-SPD 11	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 996.2	CLD-AMT 8	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
004	0000	104 B	27070		2074	14818
004	0010	0310	30093		2399	14566
004	0020	0284	30970		2471	14568
004	0030	0168	31538		2525	14526
004	0050	-0046	32082		2580	14439
004	0075	-0077 B	32323		2600	14432
004	0100	-0046	32580		2620	14455
004	0125	0046	32962		2646	14506
004	0150	0138 D	33277		2666	14556
004	0175	0261 B	33723		2692	14621
004	0200	0356 E	34045		2709	14670
004	0225	0387	34201		2719	14689
004	0250	0429 B	34365		2727	14713
004	0300	0474 B	34626		2743	14744
004	0318	0466 B	34624		2744	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	27070		2074	14818	0000	00000	7037
0010	0310	30093		2399	14566	0055	00002	3927
0020	0284	30970		2471	14568	0091	00007	3243
0030	0168	31538		2525	14526	0121	00015	2731
0050	-0046	32082		2580	14439	0171	00035	2208
0075	-0077 B	32323		2600	14432	0224	00068	2011
0100	-0046	32580		2620	14455	0272	00111	1824
0125	0046	32962		2646	14506	0315	00160	1575
0150	0138 D	33277		2666	14556	0352	00213	1392
0175	0261 B	33723		2692	14621	0384	00266	1149
0200	0356 E	34045		2709	14670	0411	00318	0994
0225	0387	34201		2719	14689	0435	00370	0909
0250	0429 B	34365		2727	14713	0457	00423	0833
0300	0474 B	34626		2743	14744	0496	00531	0693

C-REF-NO 003	YR 1963	DEPTH 301	WAVES 1 0424	AIR T 11.4	VIS 5
CONS. NO 048	MONTH 7	MXSAMPD 03	WAVES 2 0435	WET B 10.9	STN
LAT 49-171N	DAY 03	NO.DPTH 13	WND-DIR 030	WW-CODE 02	
LON 67-228W	HR 01.4	W-COLOR 00	WND-SPD 14	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 996.9	CLD-AMT 9	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
014	0000	107 B	28927		2213	14852
014	0010	0817	29759		2317	14769
014	0020	0372	30790		2449	14603
014	0030	0252	31381		2506	14561
014	0050	0054	31948		2564	14484
014	0075	-0068 B	32203		2590	14435
014	0100	-0039	32610		2622	14458
014	0124	0051	32979		2647	14509
014	0149	0206 D	33540		2682	14590
014	0174		34047			
014	0224		34279			
014	0249		34466			
014	0300		34613			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1070 B	28927		2213	14852	0000	00000	5704
0010	0817	29759		2317	14769	0052	00002	4716
0020	0372	30790		2449	14603	0093	00008	3450
0030	0252	31381		2506	14561	0125	00016	2907
0050	0054	31948		2564	14483	0178	00038	2354
0075	-0068 B	32203		2590	14435	0234	00073	2106
0100	-0039	32610		2622	14458	0283	00117	1804
0125	0055	33000		2649	14511	0326	00165	1551
0150		33563						
0175		3406 B						
0200		3422 I						
0225		34287						
0250		3443 H						
0300		34613						

C-REF-NO 003	YR 1963	DEPTH 227	WAVES 1 49XX	AIR T 11.3	VIS 5
CONS. NO 049	MONTH 7	MXSAMPD 02	WAVES 2 49XX	WET B 10.8	STN
LAT 49-180N	DAY 03	NO.DPTH 13	WND-DIR 020	WW-CODE 02	
LON 67-234W	HR 02.7	W-COLOR 00	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 997.9	CLD-AMT 9	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
027	0000	118 B	29466		2236	14898
027	0010	1168	29458		2238	14896
027	0015	1170	29617		2250	14899
027	0020	0450	30878		2449	14638
027	0030	0269 B	31376		2505	14568
027	0050	0114	31818		2551	14509
027	0075	-0074	32279		2596	14433
027	0100	-0033 C	32590		2620	14461
027	0125	0070 B	33031		2650	14518
027	0150	0210 F	33570		2684	14592
027	0175	0304	33907		2703	14642
027	0200	0395	34151		2714	14688
027	0222	0428 B	34377		2728	14708

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1180 B	29466		2236	14898	0000	00000	5485
0010	1168	29458		2238	14896	0055	00003	5472
0020	0450	30878		2449	14638	0100	00009	3455
0030	0269 B	31376		2505	14568	0132	00017	2924
0050	0114	31818		2551	14509	0186	00039	2485
0075	-0074	32279		2596	14433	0243	00075	2045
0100	-0033 C	32590		2620	14461	0292	00118	1822
0125	0070 B	33031		2650	14518	0334	00166	1536
0150	0210 F	33570		2684	14592	0369	00215	1222
0175	0304	33907		2703	14642	0398	00262	1047
0200	0395	34151		2714	14688	0423	00311	0953

C-REF-NO 003	YR 1963	DEPTH 120	WAVES 1 49XX	AIR T 11.0	VIS 5
CONS. NO 050	MONTH 7	MXSAMPD 01	WAVES 2 49XX	WET B 10.8	STN
LAT 49-188N	DAY 03	NO.DPTH 9	WND-DIR 050	WW-CODE 02	
LON 67-240W	HR 04.0	W-COLOR 00	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 997.2	CLD-AMT 9	HW 1

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
040	0000	118 B	29178		2214	14895
040	0010	0792 B	30075		2345	14764
040	0015	0468	30893		2448	14645
040	0020	0317	31287		2494	14586
040	0030	0290	31353		2501	14577
040	0050	0146 B	31713		2540	14522
040	0075	-0016	32204		2588	14459
040	0100	-0026	32561		2617	14464
040	0115	0016 F	32800		2635	14489

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1180 B	29178		2214	14895	0000	00000	5698
0010	0792 B	30075		2345	14764	0051	00002	4447
0020	0317	31287		2494	14586	0088	00008	3029
0030	0290	31353		2501	14577	0119	00015	2957
0050	0146 B	31713		2540	14522	0174	00038	2584
0075	-0016	32204		2588	14459	0234	00075	2125
0100	-0026	32561		2617	14464	0284	00119	1847

C-REF-NO 003	YR 1963	DEPTH 115	WAVES 1 06X0	AIR T 11.2	VIS 6
CONS. NO 051	MONTH 7	MXSAMPD 01	WAVES 2 08X1	WET B 11.0	STN
LAT 49-188N	DAY 03	NO.DPTH 9	WND-DIR 060	WW-CODE 25	
LON 67-240W	HR 05.2	W-COLOR 40	WND-SPD 03	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 996.6	CLD-AMT 8	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
052	0000	113 B	29443		2243	14880
052	0010	1079	29554		2260	14865
052	0015	0784	30113		2349	14762
052	0020	0419	31023		2463	14626
052	0030	0328	31263		2491	14592
052	0050	0152 B	31699		2539	14524
052	0075	-0010	32188		2587	14462
052	0100	-0028	32516		2614	14462
052	0111	0002 D	32704		2628	14480

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1130 B	29443		2243	14880	0000	00000	5418
0010	1079	29554		2260	14865	0054	00003	5255
0020	0419	31023		2463	14626	0097	00009	3316
0030	0328	31263		2491	14592	0129	00017	3056
0050	0152 B	31699		2539	14524	0185	00040	2598
0075	-0010	32188		2587	14462	0245	00077	2140
0100	-0028	32516		2614	14462	0296	00122	1880

C-REF-NO 003	YR 1963	DEPTH 238	WAVES 1 06X0	AIR T 11.2	VIS 7
CONS. NO 052	MONTH 7	MXSAMPD 02	WAVES 2 0611	WET B 11.0	STN
LAT 49-180N	DAY 03	NO.DPTH 14	WND-DIR 060	WW-CODE 25	
LON 67-234W	HR 05.8	W-COLOR 40	WND-SPD 03	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 996.6	CLD-AMT 8	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
058	0000	120 B	29367		2225	14904
058	0010	1163	29546		2245	14895
058	0015	0989	29854		2298	14837
058	0020	0433	30960		2457	14632
058	0030	0381	31071		2471	14613
058	0050	0121 B	31803		2549	14512
058	0075	-0002	32085		2578	14464
058	0100	-0034	32475		2611	14459
058	0125	0060	32986		2647	14513
058	0150	0178 B	33456		2677	14576
058	0175	0308 D	33902		2702	14643
058	0200	0364	34124		2715	14674
058	0225	0384 C	34221		2721	14688
058	0235	0418 B	34342		2727	14706

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1200 B	29367		2225	14904	0000	00000	5593
0010	1163	29546		2245	14895	0055	00003	5399
0020	0433	30960		2457	14632	0099	00009	3377
0030	0381	31071		2471	14613	0132	00017	3246
0050	0121 B	31803		2549	14512	0190	00040	2500
0075	-0002	32085		2578	14464	0250	00078	2222
0100	-0034	32475		2611	14459	0302	00124	1909
0125	0060	32986		2647	14513	0345	00174	1565
0150	0178 B	33456		2677	14576	0381	00224	1284
0175	0308 D	33902		2702	14643	0411	00273	1055
0200	0364	34124		2715	14674	0436	00321	0942
0225	0384 C	34221		2721	14688	0459	00372	0891

C-REF-NO 003	YR 1963	DEPTH 302	WAVES 1 0610	AIR T 11.4	VIS 7
CONS. NO 053	MONTH 7	MXSAMPD 03	WAVES 2 0611	WET B 11.2	STN
LAT 49-171N	DAY 03	NO.DPTH 14	WND-DIR 060	WW-CODE 02	
LON 67-228W	HR 06.6	W-COLOR 40	WND-SPD 03	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 996.9	CLD-AMT 8	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
066	0000	118 B	29423		2233	14898
066	0010	1182	29419		2232	14900
066	0020	1068	29682		2272	14864
066	0030	0464	30836		2444	14645
066	0050	0150	31721		2541	14524
066	0075	-0062 B	32255		2594	14438
066	0100	-0033	32605		2621	14461
066	0125	0047	32968		2647	14507
066	0150	0158 E	33405		2675	14567
066	0175	0319 B	33972		2707	14649
066	0200	0388 E	34198		2718	14686
066	0225	0411	34328		2726	14701
066	0250	0452 B	34452		2732	14724
066	0298	0461 B	34574		2740	14737

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1180 B	29423		2233	14898	0000	00000	5517
0010	1182	29419		2232	14900	0055	00003	5525
0020	1068	29682		2272	14864	0109	00011	5144
0030	0464	30836		2444	14645	0152	00022	3501
0050	0150	31721		2541	14524	0213	00046	2580
0075	-0062 B	32255		2594	14438	0272	00082	2068
0100	-0033	32605		2621	14461	0321	00126	1810
0125	0047	32968		2647	14507	0363	00174	1571
0150	0158 E	33405		2675	14567	0400	00225	1308
0175	0319 B	33972		2707	14649	0429	00273	1012
0200	0388 E	34198		2718	14686	0453	00320	0911
0225	0411	34328		2726	14701	0475	00368	0839
0250	0452 B	34452		2732	14724	0496	00418	0793
0300	0461 B	34577		2741	14738	0534	00525	0714

C-REF-NO 003	YR 1963	DEPTH 320	WAVES 1 04X0	AIR T 11.2	VIS 7
CONS. NO 054	MONTH 7	MXSAMPD 03	WAVES 2 0422	WET B 10.8	STN
LAT 49-129N	DAY 03	NO.DPTH 15	WND-DIR 040	WW-CODE 02	
LON 67-199W	HR 07.6	W-COLOR 40	WND-SPD 03	CLD-TPE 8	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 996.9	CLD-AMT 8	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
076	0000	090 B	27638		2139	14773
076	0010	0312	30047		2395	14566
076	0020	0262	30818		2461	14556
076	0030	0212	31314		2504	14542
076	0050	0001	32013		2572	14460
076	0075	-0080	32322		2600	14431
076	0100	-0049	32536		2616	14453
076	0125	0033	32912		2643	14500
076	0150	0165 E	33401		2674	14570
076	0175	0256 B	33725		2693	14618
076	0200	0349 D	34035		2709	14667
076	0225	0406 B	34288		2724	14699
076	0250	0445 D	34443		2732	14721
076	0300	0470 B	34622		2743	14742
076	0316	0466 B	34622		2744	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0900 B	27638		2139	14773	0000	00000	6411
0010	0312	30047		2395	14566	0052	00002	3963
0020	0262	30818		2461	14556	0089	00008	3342
0030	0212	31314		2504	14542	0120	00015	2930
0050	0001	32013		2572	14460	0173	00036	2279
0075	-0080	32322		2600	14431	0227	00070	2010
0100	-0049	32536		2616	14453	0275	00114	1857
0125	0033	32912		2643	14500	0319	00164	1606
0150	0165 E	33401		2674	14570	0356	00215	1316
0175	0256 B	33725		2693	14618	0387	00267	1143
0200	0349 D	34035		2709	14667	0414	00318	0995
0225	0406 B	34288		2724	14698	0437	00369	0864
0250	0445 D	34443		2732	14721	0458	00420	0792
0300	0470 B	34622		2743	14742	0495	00525	0691

C-REF-NO 003	YR 1963	DEPTH 329	WAVES 1 06X0	AIR T 10.9	VIS 3
CONS. NO 055	MONTH 7	MXSAMPD 03	WAVES 2 0644	WET B 10.8	STN
LAT 49-088N	DAY 03	NO.DPTH 15	WND-DIR 060	WW-CODE 46	
LON 67-171W	HR 08.6	W-COLOR 40	WND-SPD 03	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 996.2	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
086	0000	106 B	27535		2107	14831
086	0010	0712 D	29732		2329	14728
086	0020	0258	30942		2471	14556
086	0030	0120	31619		2534	14506
086	0050	-0056	32194		2589	14436
086	0075	-0086 B	32256		2595	14427
086	0100	-0079	32340		2601	14436
086	0125	-0056	32494		2613	14453
086	0150	0054	32972		2647	14514
086	0175	0216 B	33594		2686	14599
086	0200	0340 C	34017		2709	14663
086	0225	0391	34228		2720	14691
086	0250	0428 C	34362		2727	14713
086	0300	0470 B	34629		2744	14742
086	0325	0468 B	34625		2744	14745

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1060 B	27535		2107	14831	0000	00000	6722
0010	0712 D	29732		2329	14728	0057	00002	4601
0020	0258	30942		2471	14556	0096	00008	3245
0030	0120	31619		2534	14506	0126	00015	2640
0050	-0056	32194		2589	14436	0174	00035	2118
0075	-0086 B	32256		2595	14427	0226	00068	2059
0100	-0079	32340		2601	14436	0277	00114	1995
0125	-0056	32494		2613	14453	0326	00170	1885
0150	0054	32972		2647	14514	0370	00231	1571
0175	0216 B	33594		2686	14599	0405	00289	1209
0200	0340 C	34017		2709	14663	0433	00342	1000
0225	0391	34228		2720	14691	0456	00394	0893
0250	0428 C	34362		2727	14713	0478	00447	0834
0300	0470 B	34629		2744	14742	0516	00554	0686

C-REF-NO 003	YR 1963	DEPTH 322	WAVES 1 06X0	AIR T 11.3	VIS 6
CONS. NO 056	MONTH 7	MXSAMPD 02	WAVES 2 0633	WET B 11.1	STN
LAT 49-049N	DAY 03	NO.DPTH 13	WND-DIR 060	WW-CODE 42	
LON 67-143W	HR 09.5	W-COLOR 40	WND-SPD 03	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 995.6	CLD-AMT 8	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
095	0000	110 B	26995		2059	14839
095	0010	0376	29400		2339	14585
095	0020	0274	29908		2387	14549
095	0030	0255	30654		2448	14552
095	0050	0028	32005		2570	14472
095	0075	-0056 B	32258		2594	14441
095	0100	-0066	32421		2608	14443
095	0125	0008	32806		2636	14487
095	0150	0126 E	33272		2666	14551
095	0175	0234 B	33645		2688	14608
095	0200	0335 E	33993		2707	14660
095	0225	0393	34027		2704	14690
095	0250	0438 B				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	26995		2059	14839	0000	00000	7186
0010	0376	29400		2339	14585	0059	00002	4505
0020	0274	29908		2387	14549	0102	00009	4041
0030	0255	30654		2448	14552	0139	00018	3461
0050	0028	32005		2570	14472	0197	00041	2298
0075	-0056 B	32258		2594	14441	0252	00076	2068
0100	-0066	32421		2608	14443	0302	00121	1938
0125	0008	32806		2636	14487	0348	00173	1674
0150	0126 E	33272		2666	14551	0387	00227	1387
0175	0234 B	33645		2688	14608	0419	00280	1185
0200	0335 E	33993		2707	14660	0447	00333	1013
0225	0393	34027		2704	14689	0473	00390	1046
0250	0438 B							

C-REF-NO 003	YR 1963	DEPTH 183	WAVES 1 06X0	AIR T 11.6	VIS 6
CONS. NO 057	MONTH 7	MXSAMPD 02	WAVES 2 0633	WET B 11.3	STN
LAT 49-008N	DAY 03	NO.DPTH 11	WND-DIR 060	WW-CODE 02	
LON 67-115W	HR 10.5	W-COLOR 40	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	RARD 995.6	CLD-AMT 8	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
105	0000	108 B	27583		2107	14839
105	0010	0314	29589		2359	14561
105	0020	0289	30064		2399	14558
105	0030	0201	30980		2478	14533
105	0050	0016	32014		2571	14467
105	0075	-0074 B	32230		2592	14433
105	0100	-0048	32545		2617	14453
105	0125	0084	33095		2655	14525
105	0150	0241 F	33678		2690	14607
105	0175	0298 B	33890		2702	14639
105	0178	0304 F	33888		2702	14642

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	27583		2107	14839	0000	00000	6717
0010	0314	29589		2359	14561	0055	00002	4312
0020	0289	30064		2399	14558	0097	00008	3933
0030	0201	30980		2478	14533	0132	00017	3176
0050	0016	32014		2571	14467	0187	00039	2285
0075	-0074 B	32230		2592	14432	0242	00074	2083
0100	-0048	32545		2617	14453	0292	00118	1850
0125	0084	33095		2655	14525	0334	00166	1495
0150	0241 F	33678		2690	14607	0368	00213	1165
0175	0298 B	33890		2702	14639	0395	00259	1055

C-REF-NO 003	YR 1963	DEPTH 130	WAVES 1 05X0	AIR T 11.6	VIS 4
CONS. NO 058	MONTH 7	MXSAMPD 01	WAVES 2 0533	WET B 11.4	STN
LAT 48-594N	DAY 03	NO.DPTH 8	WND-DIR 050	WW-CODE 46	
LON 67-106W	HR 11.1	W-COLOR 40	WND-SPD 03	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 995.2	CLD-AMT 9	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
111	0000	118 B	28042		2126	14881
111	0010	0517	28896		2285	14638
111	0015	0314	29572		2357	14561
111	0020	0228	30262		2419	14534
111	0030	0344	31032		2471	14596
111	0050	0088 B	31937		2562	14499
111	0075	-0040	32221		2590	14448
111	0100	-0016	32640		2623	14469

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1180 B	28042		2126	14881	0000	00000	6539
0010	0517	28896		2285	14638	0058	00003	5013
0020	0228	30262		2419	14534	0102	00009	3740
0030	0344	31032		2471	14596	0137	00018	3244
0050	0088 B	31937		2562	14499	0194	00040	2380
0075	-0040	32221		2590	14448	0250	00076	2102
0100	-0016	32640		2623	14469	0299	00119	1791

C-REF-NO 003	YR 1963	DEPTH 91	WAVES 1 05X0	AIR T 13.1	VIS 4
CONS. NO 059	MUNTH 7	MXSAMPD 01	WAVES 2 0522	WET B 11.6	STN
LAT 48-590N	DAY 03	NO.DPTH 8	WND-DIR 050	WW-CODE 50	
LON 67-084W	HR 11.8	W-COLOR 30	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 994.9	CLD-AMT 9	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
118	0000	125 B	28800		2172	14915
118	0010	0941	29914		2311	14819
118	0015	0531	30188		2386	14661
118	0020	0300	30265		2414	14565
118	0030	0329	31151		2482	14591
118	0050	0108 B	31837		2552	14506
118	0075	-0048	32381		2604	14447
118	0086	-0030	32567		2618	14459

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1250 B	28800		2172	14915	0000	00000	6099
0010	0941	29914		2311	14819	0055	00002	4775
0020	0300	30265		2414	14565	0098	00009	3789
0030	0329	31151		2482	14591	0132	00018	3142
0050	0108 B	31837		2552	14506	0189	00040	2467
0075	-0048	32381		2604	14447	0245	00075	1977

C-REF-NO 003	YR 1963	DEPTH 33	WAVES 1 05X0	AIR T 12.3	VIS 4
CONS. NO 060	MONTH 7	MXSAMPD 00	WAVES 2 0533	WET B 11.9	STN
LAT 48-575N	DAY 03	NO.DPTH 5	WND-DIR 050	WW-CODE 51	
LON 67-093W	HR 12.4	W-COLOR 40	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 994.9	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
124	0000	112 B	29092		2218	14872
124	0010	0684	29098		2282	14709
124	0015	0359	29183		2323	14575
124	0020	0328	29365		2340	14565
124	0030	0264	29833		2382	14545

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	29092		2218	14872	0000	00000	5662
0010	0684	29098		2282	14709	0054	00003	5043
0020	0328	29365		2340	14565	0102	00010	4493
0030	0264	29833		2382	14545	0145	00021	4090

C-REF-NO 003	YR 1963	DEPTH 34	WAVES 1 04X0	AIR T 12.9	VIS 4
CONS. NO 061	MONTH 7	MXSAMPD 00	WAVES 2 0421	WET B 12.4	STN
LAT 48-575N	DAY 03	NO.DPTH 5	WND-DIR 040	WW-CODE 52	
LON 67-093W	HR 16.0	W-COLOR 40	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 993.9	CLD-AMT 9	HW 11

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
160	0000	110 B	28621		2185	14859
160	0010	1122	29666		2262	14882
160	0015	0831	29234		2274	14769
160	0020	0506	29044		2298	14637
160	0030	0372	29207		2324	14584

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	28621		2185	14859	0000	00000	5979
0010	1122	29666		2262	14882	0056	00003	5242
0020	0506	29044		2298	14637	0107	00010	4891
0030	0372	29207		2324	14584	0155	00023	4648

C-REF-NO 003	YR 1963	DEPTH 103	WAVES 1 02X0	AIR T 12.8	VIS 4
CONS. NO 062	MONTH 7	MXSAMPD 01	WAVES 2 0232	WET B 12.2	STN
LAT 48-590N	DAY 03	NO.DPTH 8	WND-DIR 020	WW-CODE 43	
LON 67-084W	HR 16.5	W-COLOR 40	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 993.5	CLD-AMT 9	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
165	0000	110 B	26903		2052	14838
165	0010	0570	28657		2261	14656
165	0015	0645	29150		2291	14694
165	0020	0907	29991		2322	14808
165	0030	0556	30237		2387	14675
165	0050	0283 B	31275		2495	14576
165	0075	-0061	32161		2586	14438
165	0100	-0040	32396		2605	14455

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	26903		2052	14838	0000	00000	7254
0010	0570	28657		2261	14656	0063	00003	5247
0020	0907	29991		2322	14808	0112	00010	4669
0030	0556	30237		2387	14675	0156	00021	4045
0050	0283 B	31275		2495	14576	0227	00049	3011
0075	-0061	32161		2586	14438	0292	00089	2140
0100	-0040	32396		2605	14455	0344	00135	1967

C-REF-NO 003	YR 1963	DEPTH 132	WAVES 1 02X0	AIR T 13.9	VIS 5
CONS. NO 063	MONTH 7	MXSAMPD 01	WAVES 2 02X1	WET B 12.6	STN
LAT 48-594N	DAY 03	NO.DPTH 9	WND-DIR 020	WW-CODE 43	
LON 67-106W	HR 16.9	W-COLOR 20	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 993.9	CLD-AMT 9	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
169	0000	112 B	26952		2052	14846
169	0010	0974	27534		2120	14801
169	0015	0344	29329		2336	14571
169	0020	0320	29604		2360	14565
169	0030	0251	30234		2415	14545
169	0050	0150 B	31723		2541	14524
169	0075	-0032	32197		2588	14452
169	0100	-0071	32423		2608	14441
169	0125	-0004 E	32710		2628	14480

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	26952		2052	14846	0000	00000	7249
0010	0974	27534		2120	14801	0069	00003	6594
0020	0320	29604		2360	14565	0124	00011	4305
0030	0251	30234		2415	14545	0165	00021	3777
0050	0150 B	31723		2541	14524	0228	00046	2579
0075	-0032	32197		2588	14452	0288	00083	2124
0100	-0071	32423		2608	14441	0339	00129	1935
0125	-0004 E	32710		2628	14480	0385	00182	1742

C-REF-NO 003	YR 1963	DEPTH 194	WAVES 1 04X0	AIR T 13.0	VIS 5
CONS. NO 064	MONTH 7	MXSAMPD 02	WAVES 2 04X1	WET B 12.2	STN
LAT 49-008N	DAY 03	NO.DPTH 11	WND-DIR 360	WW-CODE 02	
LON 67-115W	HR 17.4	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 993.9	CLD-AMT 9	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
174	0000	109 B	27348		2088	14840
174	0010	0971	27645		2129	14801
174	0020	0320	30024		2393	14571
174	0030	0276	30503		2434	14560
174	0050	0190	31489		2519	14538
174	0075	-0069 B	32192		2589	14434
174	0100	-0064	32381		2604	14443
174	0125	0033	32882		2640	14499
174	0150	0148 E	33323		2669	14561
174	0175	0279 B	33772		2695	14629
174	0190	0321 D	33940		2704	14652

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1090 B	27348		2088	14840	0000	00000	6908
0010	0971	27645		2129	14801	0067	00003	6507
0020	0320	30024		2393	14571	0120	00011	3987
0030	0276	30503		2434	14560	0158	00020	3591
0050	0190	31489		2519	14538	0222	00046	2782
0075	-0069 B	32192		2589	14434	0284	00084	2114
0100	-0064	32381		2604	14443	0335	00130	1969
0125	0033	32882		2640	14499	0380	00182	1629
0150	0148 E	33323		2669	14561	0418	00234	1364
0175	0279 B	33772		2695	14629	0449	00286	1127

C-REF-NO 003	YR 1963	DEPTH 324	WAVES 1 04X0	AIR T 13.0	VIS 2
CONS. NO 065	MONTH 7	MXSAMPD 03	WAVES 2 04X1	WET B 12.3	STN
LAT 49-049N	DAY 03	NO.DPTH 15	WND-DIR 010	WW-CODE 47	
LON 67-143W	HR 18.2	W-COLOR 40	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 994.2	CLD-AMT 9	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
182	0000	118 B	29869		2267	14903
182	0010	0360	29870		2377	14584
182	0020	0218	30410		2431	14531
182	0030	0170	31460		2518	14526
182	0050	-0022	32051		2576	14450
182	0075	-0076 B	32238		2593	14432
182	0100	-0075	32358		2603	14438
182	0125	-0018	32673		2626	14473
182	0150	0092 E	33123		2656	14533
182	0175	0238 B	33660		2689	14610
182	0200	0311 D	33894		2702	14649
182	0225	0383	34169		2716	14687
182	0250	0432 C	34397		2729	14715
182	0275	0465 B	34574		2740	14735
182	0296	0466 B	34616		2743	14740

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1180 B	29869		2267	14903	0000	00000	5187
0010	0360	29870		2377	14584	0047	00002	4136
0020	0218	30410		2431	14531	0086	00008	3621
0030	0170	31460		2518	14526	0118	00016	2791
0050	-0022	32051		2576	14450	0169	00036	2241
0075	-0076 B	32238		2593	14432	0223	00071	2076
0100	-0075	32358		2603	14438	0274	00116	1983
0125	-0018	32673		2626	14473	0321	00170	1764
0150	0092 E	33123		2656	14533	0362	00228	1479
0175	0238 B	33660		2689	14610	0396	00283	1177
0200	0311 D	33894		2702	14649	0424	00337	1065
0225	0383	34169		2716	14687	0449	00392	0929
0250	0432 C	34397		2729	14715	0471	00445	0812

C-REF-NO 003	YR 1963	DEPTH 329	WAVES 1 02X0	AIR T 11.9	VIS 0
CONS. NO 066	MONTH 7	MXSAMPD 03	WAVES 2 0533	WET B 11.7	STN
LAT 49-088N	DAY 03	NO.DPTH 15	WND-DIR 020	WW-CODE 46	
LON 67-171W	HR 19.1	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 995.2	CLD-AMT 9	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	114 B	26997		2052	14853
191	0010	0252	30074		2402	14540
191	0020	0267	30903		2467	14559
191	0030	0142	31607		2532	14515
191	0050	-0048	32087		2580	14438
191	0075	-0082 B	32240		2594	14429
191	0100	-0077	32424		2608	14438
191	0125	0012	32817		2636	14489
191	0150	0109 D	33192		2661	14542
191	0175	0240 B	33656		2689	14611
191	0200	0338 E	33995		2707	14662
191	0225	0370	34130		2715	14681
191	0250	0426 E	34357		2727	14712
191	0300	0472 B	34673		2747	14744
191	0324	0468 B	34612		2743	14745

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1140 B	26997		2052	14853	0000	00000	7248
0010	0252	30074		2402	14540	0056	00002	3899
0020	0267	30903		2467	14559	0092	00007	3281
0030	0142	31607		2532	14515	0122	00015	2662
0050	-0048	32087		2580	14438	0171	00034	2203
0075	-0082 B	32240		2594	14429	0225	00069	2072
0100	-0077	32424		2608	14438	0275	00114	1932
0125	0012	32817		2636	14489	0320	00166	1668
0150	0109 D	33192		2661	14542	0359	00220	1437
0175	0240 B	33656		2689	14611	0392	00275	1182
0200	0338 E	33995		2707	14662	0420	00328	1014
0225	0370	34130		2715	14681	0445	00382	0946
0250	0426 E	34357		2727	14712	0467	00436	0835
0300	0472 B	34673		2747	14744	0505	00541	0655

C-REF-NO 003 YR 1963 DEPTH 320 WAVES 1 04X0 AIR T 12.0 VIS 0
 CONS. NO 067 MONTH 7 MXSAMPD 03 WAVES 2 04X2 WET B 11.8 STN
 LAT 49-129N DAY 03 NO.DPTH 15 WND-DIR 040 WW-CODE 44
 LON 67-199W HR 20.2 W-COLOR 30 WND-SPD 01 CLD-TPE X
 MARSD SQ 151 C/I 1810 W-TRNSP PARO 995.6 CLD-AMT 9 HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
202	0000	097 B	28574		2202	14811
202	0010	1022	29228		2244	14840
202	0020	0351	30522		2430	14591
202	0030	0209	31177		2493	14539
202	0050	0017	31898		2562	14466
202	0075	-0044 B	32229		2591	14446
202	0100	-0006	32661		2625	14474
202	0125	0063	33019		2650	14515
202	0150	0186 E	33421		2674	14579
202	0175	0296 B	33842		2699	14637
202	0199	0357 D	34046		2709	14670
202	0224	0407	34283		2723	14699
202	0249	0450	34534		2738	14724
202	0299	0470 B	34603		2742	14742
202	0316	0466 B	34649		2746	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0970 B	28574		2202	14811	0000	00000	5813
0010	1022	29228		2244	14840	0056	00003	5407
0020	0351	30522		2430	14591	0102	00009	3635
0030	0209	31177		2493	14539	0135	00018	3032
0050	0017	31898		2562	14466	0190	00039	2374
0075	-0044 B	32229		2591	14446	0246	00075	2095
0100	-0006	32661		2625	14474	0295	00118	1779
0125	0063	33019		2650	14515	0336	00166	1541
0150	0186 E	33421		2674	14579	0372	00216	1316
0175	0296 B	33842		2699	14637	0403	00267	1089
0200	0359 D	34055		2710	14671	0429	00317	0989
0225	0409	34294		2724	14700	0452	00367	0862
0250	0451	34538		2739	14725	0472	00416	0727
0300	0473 B	3465 I		2745	14744	0508	00516	0673

C-REF-NO 003	YR 1963	DEPTH 299	WAVES 1 24X0	AIR T 12.6	VIS 4
CONS. NO 068	MONTH 7	MXSAMPD 03	WAVES 2 2722	WET B. 12.1	STN
LAT 49-171N	DAY 03	NO.DPTH 14	WND-DIR 240	WW-CODE 42	
LON 67-228W	HR 21.1	W-COLOR 30	WND-SPD 04	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 995.2	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
211	0000	119 B	29276		2220	14899
211	0010	1136	29464		2244	14884
211	0020	0984	29832		2297	14835
211	0030	0352	31153		2480	14601
211	0050	0094	31876		2556	14501
211	0075	-0032 B	32218		2590	14452
211	0100	-0038	32578		2619	14458
211	0125	0034	32927		2644	14500
211	0150	0150 D	33344		2670	14562
211	0175	0306 B	33893		2702	14642
211	0200	0384 E	34168		2716	14684
211	0225	0404	34284		2723	14698
211	0250	0448 B	34507		2736	14723
211	0294	0466 B	34588		2741	14739

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1190 B	29276		2220	14899	0000	00000	5643
0010	1136	29464		2244	14884	0055	00003	5414
0020	0984	29832		2297	14835	0107	00011	4902
0030	0352	31153		2480	14601	0148	00020	3159
0050	0094	31876		2556	14501	0204	00043	2430
0075	-0032 B	32218		2590	14452	0261	00079	2108
0100	-0038	32578		2619	14458	0311	00123	1829
0125	0034	32927		2644	14500	0354	00172	1595
0150	0150 D	33344		2670	14562	0391	00224	1349
0175	0306 B	33893		2702	14642	0421	00274	1060
0200	0384 E	34168		2716	14683	0446	00322	0929
0225	0404	34284		2723	14698	0469	00371	0865
0250	0448 B	34507		2736	14723	0489	00421	0747

C-REF-NO 003	YR 1963	DEPTH 247	WAVES 1 23X0	AIR T 12.6	VIS 4
CONS. NO 069	MONTH 7	MXSAMPD 02	WAVES 2 26X1	WET B 12.1	STN
LAT 49-180N	DAY 03	NO.DPTH 13	WND-DIR 230	WW-CODE 44	
LON 67-234W	HR 21.8	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 994.9	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
218	0000	120 B	29207		2212	14902
218	0010	1177	29391		2231	14898
218	0015	1107	29756		2271	14878
218	0020	0847	30105		2339	14787
218	0030	0258	31447		2511	14564
218	0050	0129 B	31790		2547	14515
218	0075	-0034	32265		2594	14452
218	0100	-0040	32488		2612	14456
218	0125	0051 D	32941		2644	14508
218	0150	0212 B	33560		2683	14593
218	0175	0330 C	33989		2707	14654
218	0200	0375	34172		2718	14680
218	0225	0393 B	34254		2722	14693

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1200 B	29207		2212	14902	0000	00000	5711
0010	1177	29391		2231	14898	0056	00003	5537
0020	0847	30105		2339	14787	0107	00010	4500
0030	0258	31447		2511	14564	0144	00019	2862
0050	0129 B	31790		2547	14515	0198	00041	2515
0075	-0034	32265		2594	14452	0256	00077	2071
0100	-0040	32488		2612	14456	0305	00122	1897
0125	0051 D	32941		2644	14508	0349	00172	1594
0150	0212 B	33560		2683	14593	0385	00222	1231
0175	0330 C	33989		2707	14654	0413	00268	1009
0200	0375	34172		2718	14680	0438	00315	0917
0225	0393 B	34254		2722	14693	0460	00364	0876

C-REF-NO 003	YR 1963	DEPTH 95	WAVES 1 00X0	AIR T 12.5	VIS 2
CONS. NO 070	MONTH 7	MXSAMPD 01	WAVES 2 08X1	WET B 12.2	STN
LAT 49-188N	DAY 03	NO.DPTH 8	WND-DIR CALM	WW-CODE 44	
LON 67-240W	HR 22.4	W-COLOR 30	WND-SPD 00	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 994.5	CLD-AMT 9	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
224	0000	120 B	29316		2221	14903
224	0010	1193	29364		2226	14903
224	0015	1188	29402		2230	14903
224	0020	1171	29467		2238	14898
224	0030	0439	31024		2461	14637
224	0050	0182 B	31651		2533	14537
224	0075	-0002	32193		2587	14465
224	0094	-0015	32263		2593	14463

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1200 B	29316		2221	14903	0000	00000	5630
0010	1193	29364		2226	14903	0056	00003	5585
0020	1171	29467		2238	14898	0112	00011	5473
0030	0439	31024		2461	14637	0156	00022	3335
0050	0182 B	31651		2533	14537	0216	00046	2654
0075	-0002	32193		2587	14465	0276	00084	2139

C-REF-NO 003	YR 1963	DEPTH 44	WAVES 1 26X0	AIR T 12.5	VIS 8
CONS. NO 071	MONTH 7	MXSAMPD 00	WAVES 2 2632	WET B 11.4	STN
LAT 49-062N	DAY 04	NO.DPTH 5	WND-DIR 260	WW-CODE 02	
LON 66-428W	HR 17.5	W-COLOR 40	WND-SPD 05	CLD-TPE 8	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 990.1	CLD-AMT 6	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
175	0000	114	B			
175	0010	1102				
175	0020	0494				
175	0030	0348				
175	0040	0290				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1140	B						
0010	1102							
0020	0494							
0030	0348							

C-REF-NO 003	YR 1963	DEPTH 150	WAVES 1 26X0	AIR T 12.6	VIS 8
CONS. NO 072	MONTH 7	MXSAMPD 01	WAVES 2 26X2	WET B 11.4	STN
LAT 49-075N	DAY 04	NO.DPTH 9	WND-DIR 260	WW-CODE 02	
LON 66-436W	HR 18.0	W-COLOR 40	WND-SPD 04	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 990.1	CLD-AMT 6	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
180	0000	110	B			
180	0010	1071				
180	0020	0354				
180	0030	0258				
180	0050	0108				
180	0075	-0042	B			
180	0100	-0027				
180	0125	0055				
180	0145	0132	E			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100	B						
0010	1071							
0020	0354							
0030	0258							
0050	0108							
0075	-0042	B						
0100	-0027							
0125	0055							

C-REF-NO 003	YR 1963	DEPTH 225	WAVES 1 26X0	AIR T 12.6	VIS 8
CONS. NO 073	MONTH 7	MXSAMPD 02	WAVES 2 26X3	WET B 11.2	STN
LAT 49-089N	DAY 04	NO.DPTH 12	WND-DIR 260	WW-CODE 01	
LON 66-442W	HR 18.6	W-COLOR 40	WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 989.5	CLD-AMT 5	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
186	0000	111	B			
186	0010	0913				
186	0020	0297				
186	0030	0442				
186	0050	0019				
186	0075	-0060	B			
186	0100	-0018				
186	0125	0066				
186	0150	0198	D			
186	0175	0263	B			
186	0200	0344	D			
186	0220	0394	C			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1110	B						
0010	0913							
0020	0297							
0030	0442							
0050	0019							
0075	-0060	B						
0100	-0018							
0125	0066							
0150	0198	D						
0175	0263	B						
0200	0344	D						

C-REF-NC 003	YR 1963	DEPTH 300	WAVES 1 25X1	AIR T 12.5	VIS 8
CONS. NC 074	MONTH 7	MXSAMPD 03	WAVES 2 25X5	WET B 11.5	STN
LAT 49-129N	DAY 04	NC.DPTH 14	WND-DIR 250	WW-CODE 01	
LON 66-464W	HR 19.6	W-COLOR 40	WND-SPD 07	CLD-TPE 6	
MARSC SQ 151	C/I 1810	W-TRNSP	PARO 988.8	CLD-AMT 3	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	112	B			
196	0010	0746	G			
196	0020	0400				
196	0030	0118				
196	0050	-0021				
196	0075	-0048	B			
196	0100	-0014				
196	0125	0055				
196	0150	0186	E			
196	0175	0272	B			
196	0200	0332	C			
196	0225	0400				
196	0250	0432	C			
196	0295	0468	B			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120	B						
0010	0746	G						
0020	0400							
0030	0118							
0050	-0021							
0075	-0048	B						
0100	-0014							
0125	0055							
0150	0186	E						
0175	0272	B						
0200	0332	C						
0225	0400							
0250	0432	C						

C-REF-NC 003	YR 1963	DEPTH 310	WAVES 1 25X1	AIR T 12.5	VIS 8
CCNS. NC 075	MONTH 7	MXSAMPD 03	WAVES 2 25X4	WET B 11.5	STN
LAT 49-176N	DAY 04	NC.DPTH 15	WND-DIR 250	WW-CCDE 01	
LON 66-488W	HR 20.6	W-CCLCR 40	WND-SPD 06	CLD-TPE 6	
MARSC SQ 151	C/I 1810	W-TRNSP	PARO 988.8	CLD-AMT 3	HW 02

OBSERVED

GMT	DEPTH	TEMP	SAL	OXYGEN	SGMT	SCUND
206	0000	112 B				
206	0010	0303				
206	0020	0090				
206	0030	0027				
206	0050	-0023				
206	0075	-0045 B				
206	0100	-0014				
206	0125	0106				
206	0150	0206 E				
206	0175	0284 B	33511		2673	14628
206	0200	0367 D	33761		2686	14671
206	0225	0400	34204		2718	14695
206	0250	0469 D	34591		2741	14733
206	0300	0468 B	34591		2741	14741
206	0305	0466 B	34589		2741	14741

INTERPOLATED

DEPTH	TEMP	SAL	OXYGEN	SGMT	SCUND	DELTA-D	POT.EN	SVA
0000	1120 B	3339 I		2551	14926	0000	00000	2485
0010	0303							
0020	0090							
0030	0027							
0050	-0023							
0075	-0045 B							
0100	-0014							
0125	0106							
0150	0206 E							
0175	0284 B	33511		2673	14628	0336	00210	1328
0200	0367 D	33761		2686	14671	0368	00272	1218
0225	0400	34204		2718	14695	0395	00330	0921
0250	0469 D	34591		2741	14733	0416	00380	0708
0300	0468 B	34591		2741	14741	0451	00481	0712

C-REF-NO 003	YR 1963	DEPTH 294	WAVES 1 25X1	AIR T 12.7	VIS 8
CCNS. NO 076	MONTH 7	MXSAMPD 03	WAVES 2 25X5	WET B 11.2	STN
LAT 49-220N	DAY 04	NC.DPTH 14	WND-DIR 250	WW-CODE 02	
LON 66-514W	HR 21.5	W-COLCR 30	WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 988.1	CLD-AMT 3	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
215	0000	115 B	30181		2297	14897
215	0010	1138	30174		2298	14894
215	0020	0300	31540		2515	14582
215	0030	0099	31887		2557	14500
215	0050	0008	32252		2591	14467
215	0075	-0024 B	32500		2612	14459
215	0100	0004	32763		2632	14480
215	0125	0106	33179		2660	14536
215	0150	0218 E	33561		2683	14596
215	0175	0274 B	33774		2695	14627
215	0200	0327 D	33954		2705	14656
215	0225	0388	34192		2718	14690
215	0250	0441 D	34403		2729	14719
215	0290	0473 B	34609		2742	14742

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1150 B	30181		2297	14897	0000	00000	4906
0010	1138	30174		2298	14894	0049	00003	4892
0020	0300	31540		2515	14582	0088	00008	2823
0030	0099	31887		2557	14500	0114	00015	2424
0050	0008	32252		2591	14467	0160	00033	2100
0075	-0024 B	32500		2612	14459	0210	00065	1895
0100	0004	32763		2632	14480	0255	00105	1706
0125	0106	33179		2660	14536	0295	00151	1445
0150	0218 E	33561		2683	14595	0329	00198	1235
0175	0274 B	33774		2695	14627	0359	00247	1121
0200	0327 D	33954		2705	14656	0386	00299	1035
0225	0388	34192		2718	14690	0410	00353	0917
0250	0441 D	34403		2729	14719	0432	00406	0817

C-REF-NC 003	YR 1963	DEPTH 303	WAVES 1 25X1	AIR T 12.5	VIS 8
CCNS. NC 077	MONTH 7	MXSAMPD 03	WAVES 2 25X3	WET B 11.3	STN
LAT 49-265N	DAY 04	NC.DPTH 14	WNC-DIR 250	Ww-CCCE 03	
LON 66-536W	HR 22.4	W-CCLCR 30	WNC-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	PARO 987.8	CLD-AMT 4	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SCUND
224	0000	112 B	30290		2310	14887
224	0010	1088	30297		2316	14878
224	0020	0210	31629		2529	14544
224	0030	0055	31979		2567	14481
224	0050	-0017	32290		2595	14456
224	0075	-0021 B	32585		2619	14462
224	0100	0022	32865		2640	14490
224	0125	0105	33175		2660	14536
224	0150	0200 D	33498		2679	14587
224	0175	0286 B	33807		2697	14633
224	0200	0348 E	34019		2708	14666
224	0225	0398	34254		2722	14695
224	0250	0453 D	34543		2739	14726
224	0298	0474 B	34600		2741	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	30290		2310	14887	0000	00000	4775
0010	1088	30297		2316	14878	0048	00002	4719
0020	0210	31629		2529	14544	0085	00008	2689
0030	0055	31979		2567	14481	0110	00014	2331
0050	-0017	32290		2595	14456	0154	00032	2060
0075	-0021 B	32585		2619	14462	0203	00063	1832
0100	0022	32865		2640	14490	0247	00102	1637
0125	0105	33175		2660	14536	0286	00146	1447
0150	0200 D	33498		2679	14587	0320	00194	1269
0175	0286 B	33807		2697	14633	0350	00244	1107
0200	0348 E	34019		2708	14666	0377	00295	1006
0225	0398	34254		2722	14695	0400	00347	0881
0250	0453 D	34543		2739	14726	0421	00396	0726
0300	0474 B	34598		2741	14743	0457	00498	0714

C-REF-NO 003	YR 1963	DEPTH 209	WAVES 1 25X1	AIR T 12.2	VIS 8
CONS. NO 078	MCNTH 7	MXSAMPD 02	WAVES 2 25X3	WET B 11.1	STN
LAT 49-272N	CAY 04	NC.DPTH 12	WNC-DIR 250	WW-CODE 01	
LON 67-006W	FR 23.6	W-COLOR 30	WND-SPD 07	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 987.4	CLD-AMT 2	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
236	0000	115 B	29860		2272	14893
236	0010	1030 D	30283		2325	14856
236	0020	0191	31643		2532	14536
236	0030	0094	31916		2560	14498
236	0050	0021	32200		2586	14472
236	0075	-0020 B	32464		2609	14461
236	0100	0009	32695		2627	14482
236	0125	0074	33019		2649	14520
236	0150	0232 E	33610		2686	14602
236	0175	0304 B	33884		2701	14641
236	0200	0360 D	34092		2713	14672
236	0205	0389	34213		2719	14687

I N T E R P O L A T E D

DEPTH	T E M P	S A L	CXYGEN	SGMT	SOUND	DELTA-D	PCT.EN	SVA
0000	1150 B	29860		2272	14893	0000	00000	5143
0010	1030 D	30283		2325	14856	0049	00002	4636
0020	0191	31643		2532	14536	0086	00008	2666
0030	0094	31916		2560	14498	0111	00014	2399
0050	0021	32200		2586	14472	0157	00032	2145
0075	-0020 B	32464		2609	14461	0208	00065	1925
0100	0009	32695		2627	14481	0255	00106	1760
0125	0074	33019		2649	14520	0296	00154	1547
0150	0232 E	33610		2686	14602	0331	00202	1209
0175	0304 B	33884		2701	14641	0360	00250	1065
0200	0360 D	34092		2713	14672	0385	00299	0962

C-REF-NO 003	YR 1963	DEPTH 112	WAVES 1 22X1	AIR T 11.7	VIS 8
CCNS. NO 079	MCNTH 7	MXSAMPD 01	WAVES 2 22X3	WET B 10.7	STN
LAT 49-28CN	DAY 05	NC.DPTH 8	WNC-DIR 220	WW-CCDE 03	
LON 67-078W	HR 00.1	W-CCLOR 10	WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	PARC 987.1	CLD-AMT 3	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SCUND
001	0000	102 B	29887		2296	14846
001	0010	0904				
001	0020	0485				
001	0030	0239				
001	0050	0116				
001	0075	-0006 B				
001	0100	0013				
001	0107	0032				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1020 B	29887		2296	14846	0000	00000	4913
0010	0904							
0020	0485							
0030	0239							
0050	0116							
0075	-0006 B							
0100	0013							

C-REF-NC 003	YR 1963	DEPTH	44	WAVES 1 22X1	AIR T 11.8	VIS 8
CONS. NO 080	MCNTH 7	MXSAMPD	00	WAVES 2 22X1	WET B 10.6	STN
LAT 49-285N	CAY 05	NO.DPTH	5	WND-DIR 220	WW-CODE 02	
LON 67-122W	HR 00.7	W-COLOR	10	WND-SPD 04	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 987.1	CLD-AMT 4	HW 07

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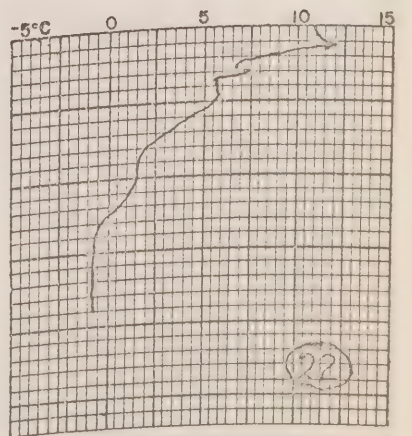
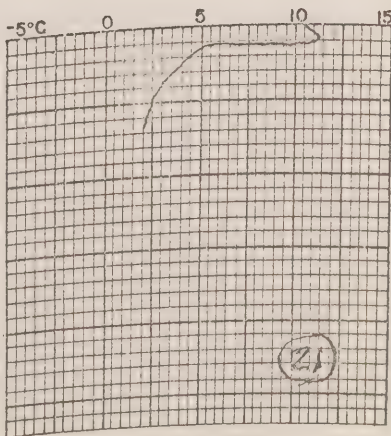
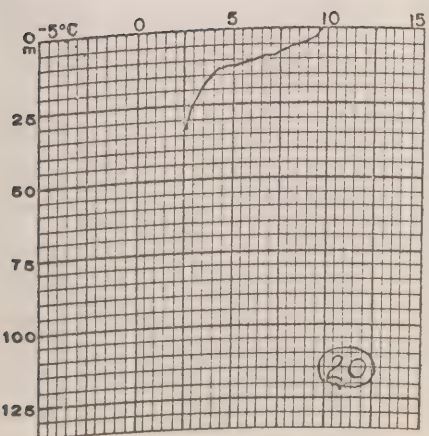
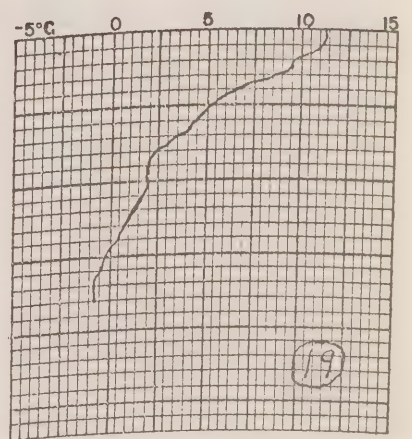
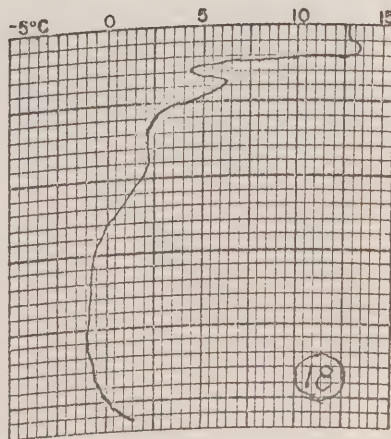
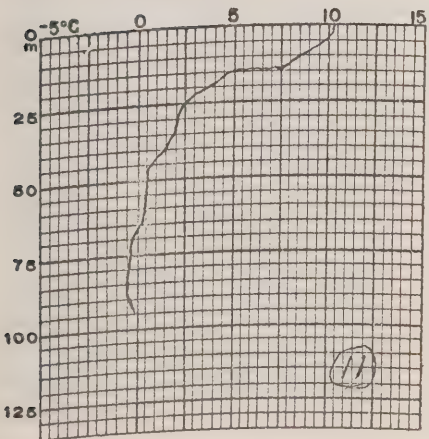
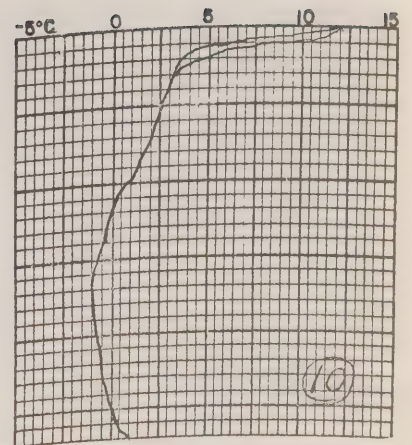
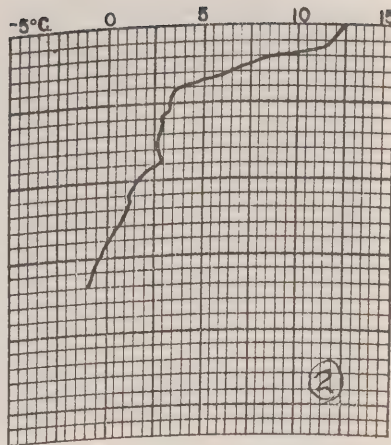
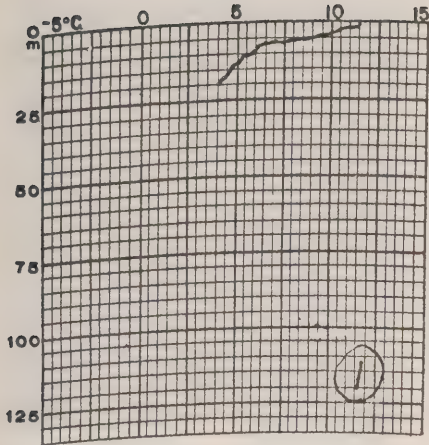
GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SCUND
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007	0010	0564				
007	0020	0349				
007	0030	0254				
007	0035	0210				

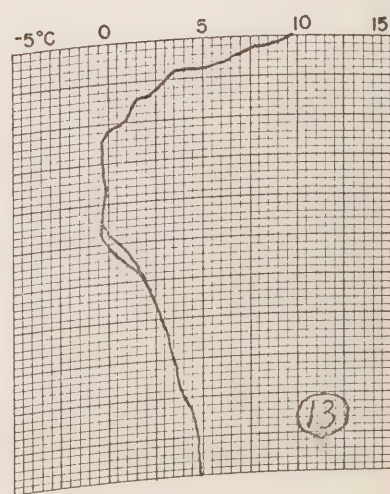
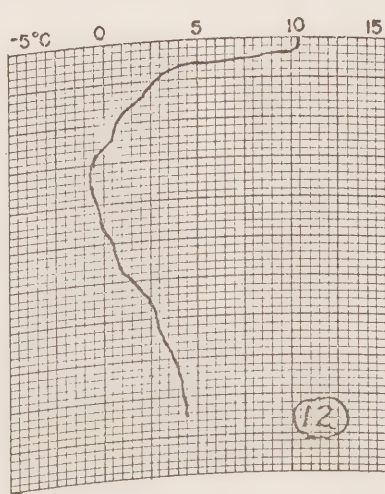
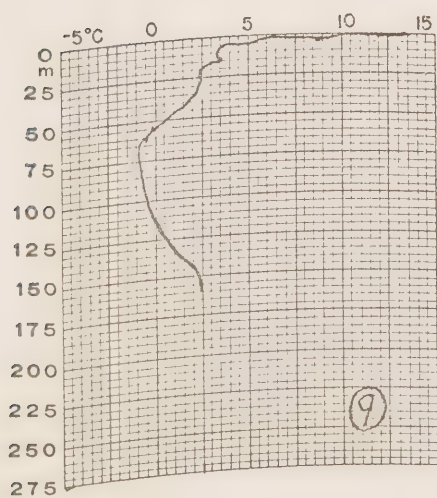
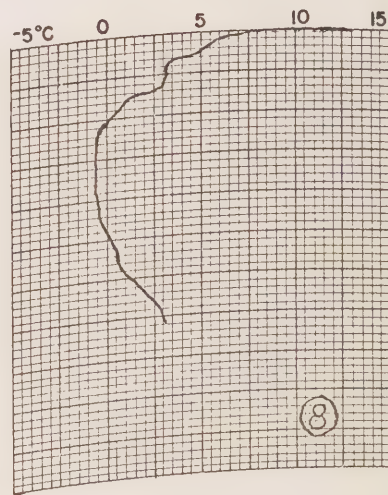
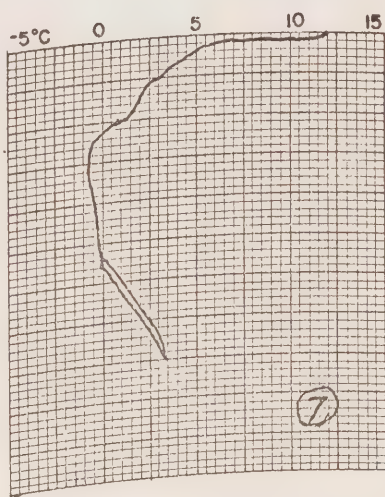
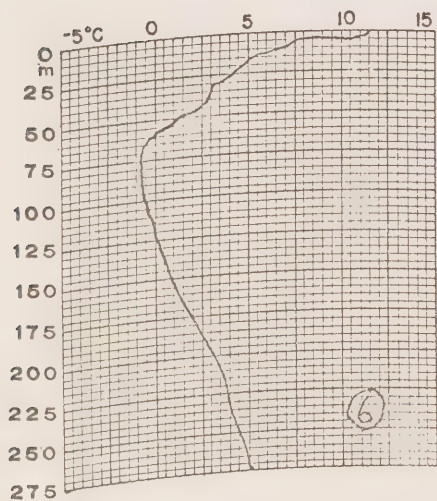
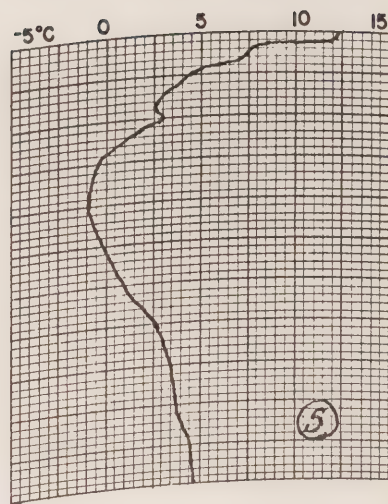
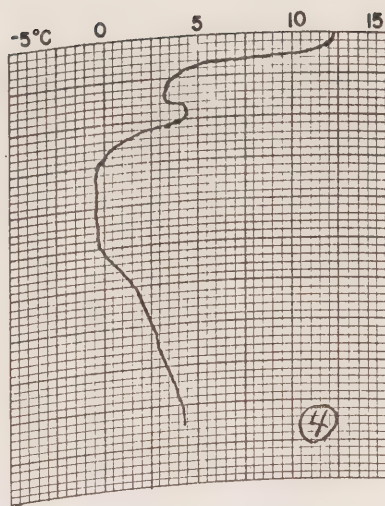
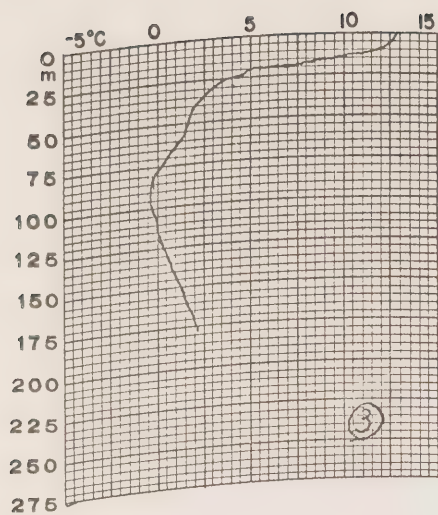
I N T E R P O L A T E D

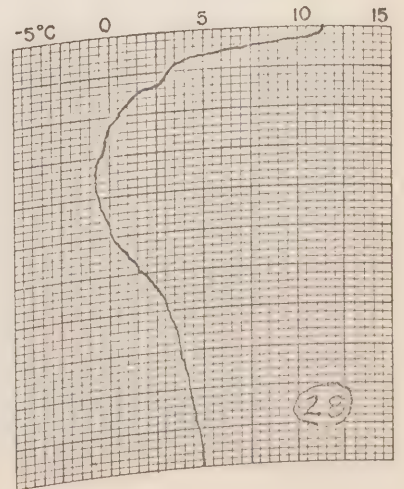
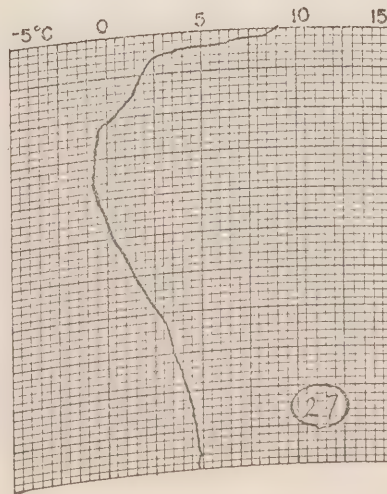
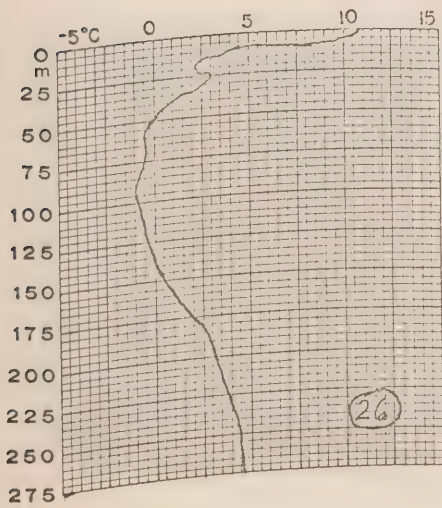
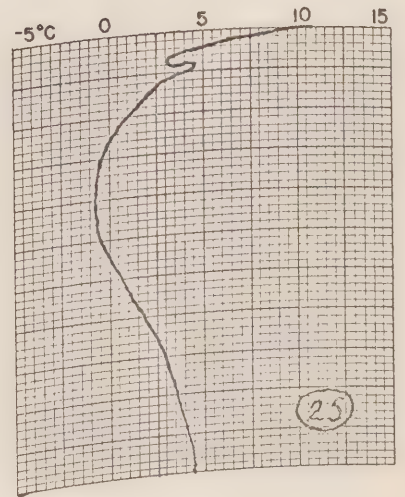
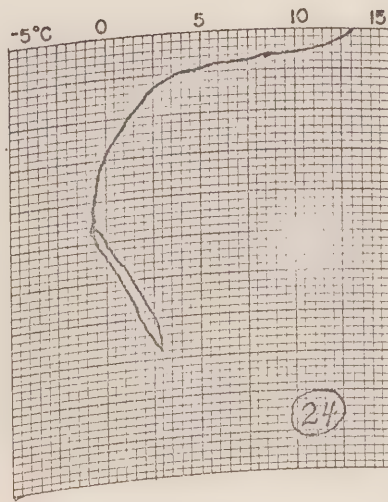
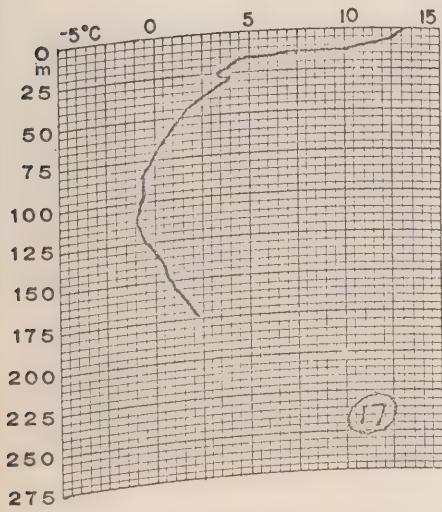
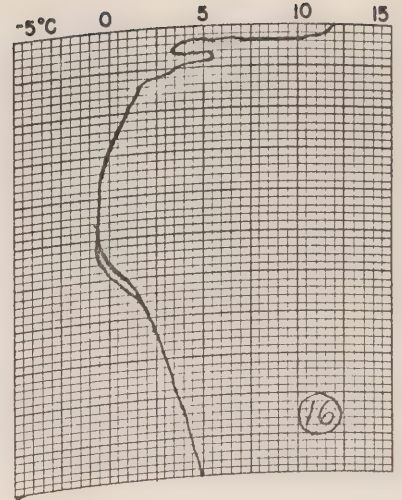
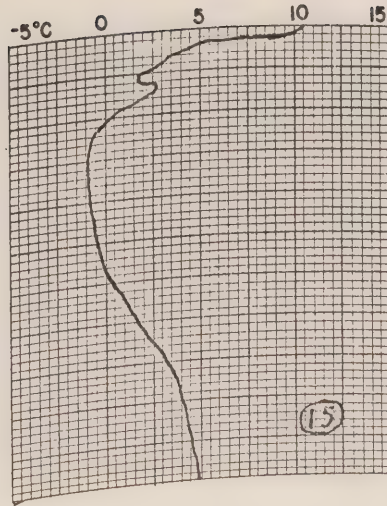
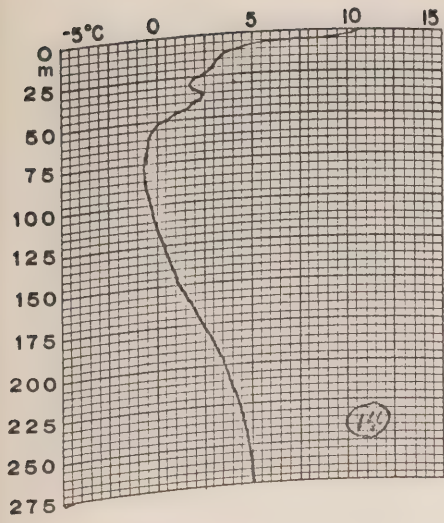
DEPTH	T E M P	S A L	OXYGEN	SGMT	SCUND	DELTA-D	POT.EN	SVA
0000	0850	B						
0010	0564							
0020	0349							
0030	0254							

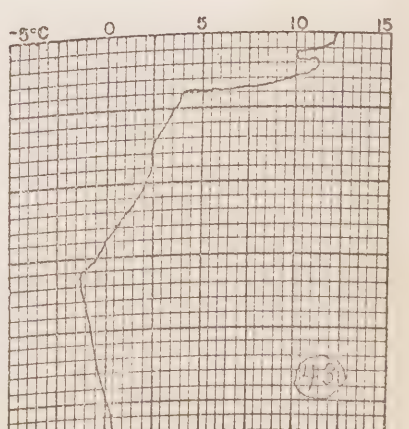
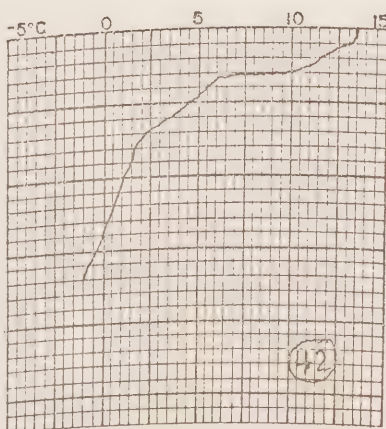
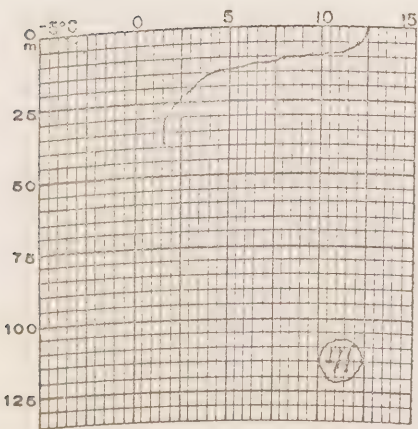
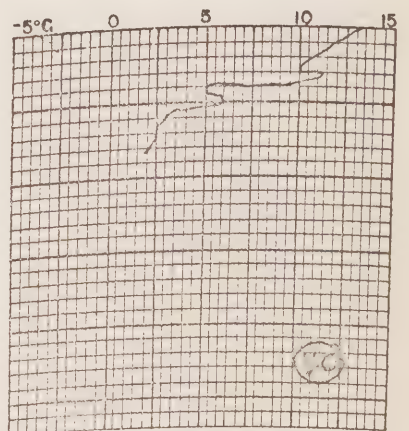
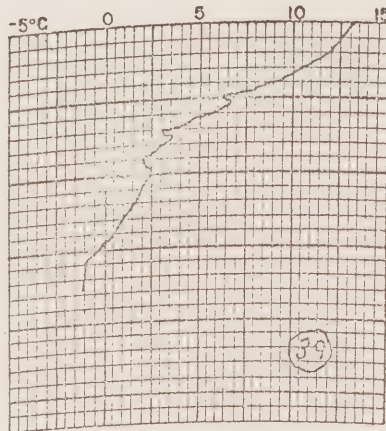
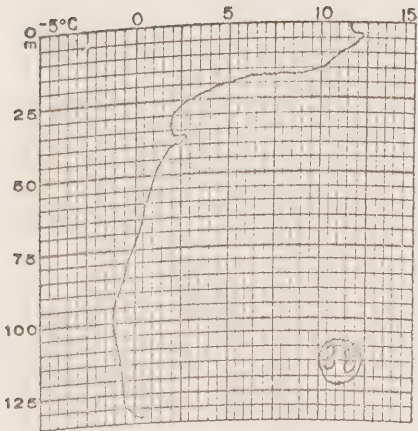
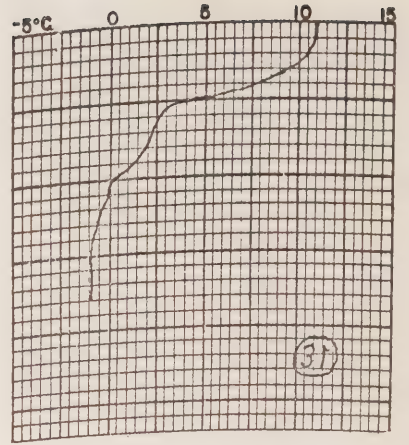
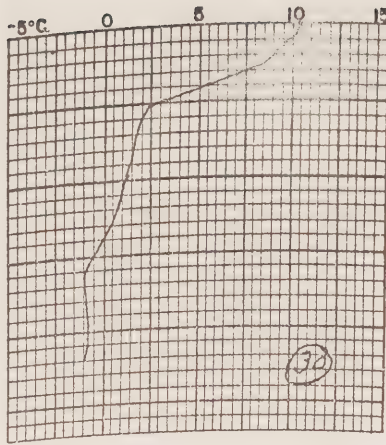
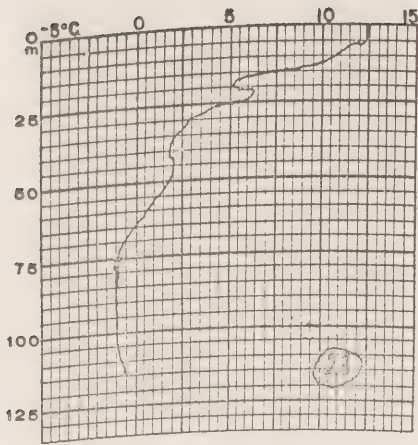
SECTION IV

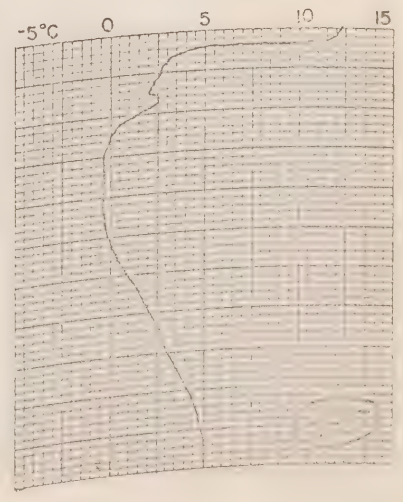
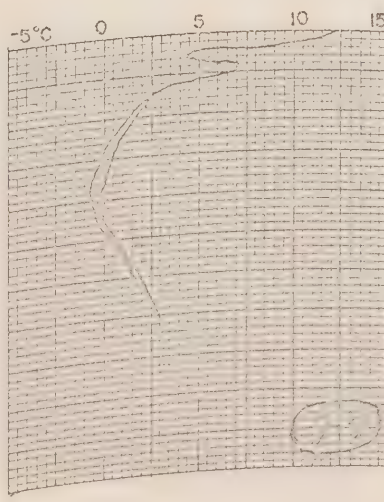
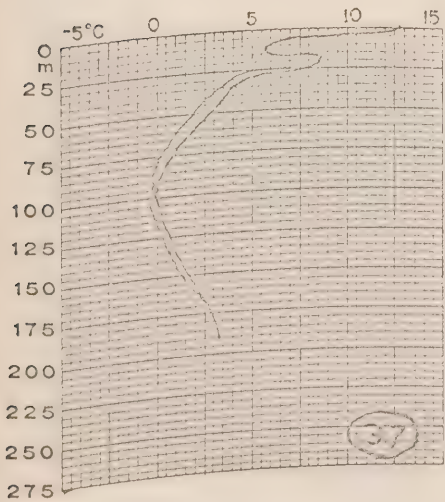
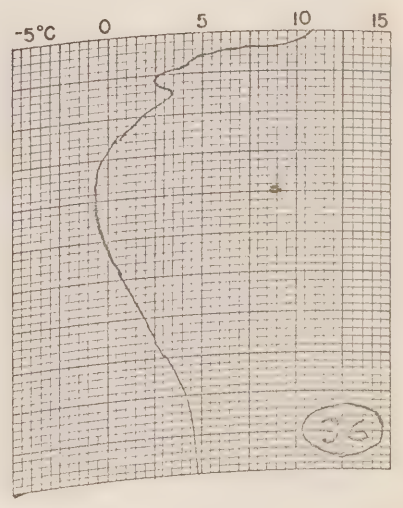
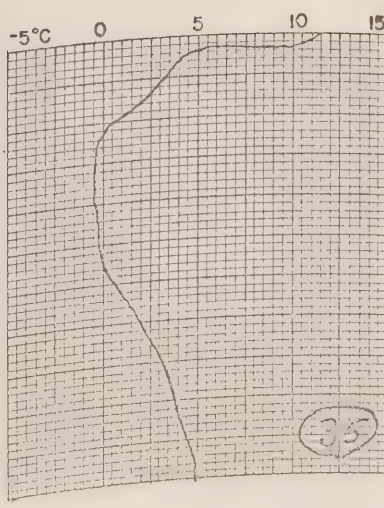
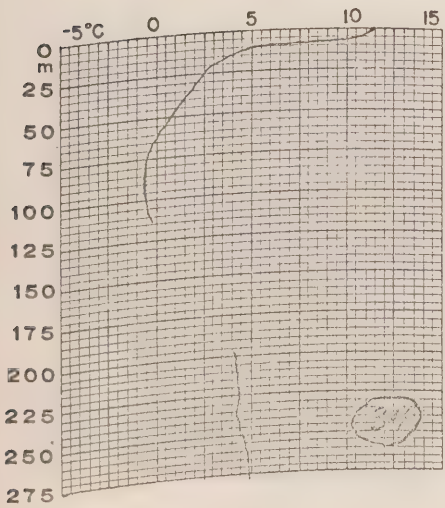
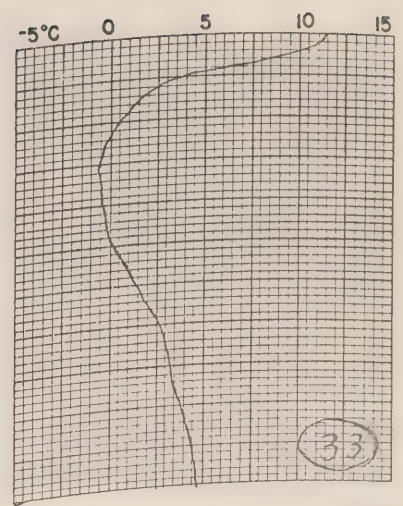
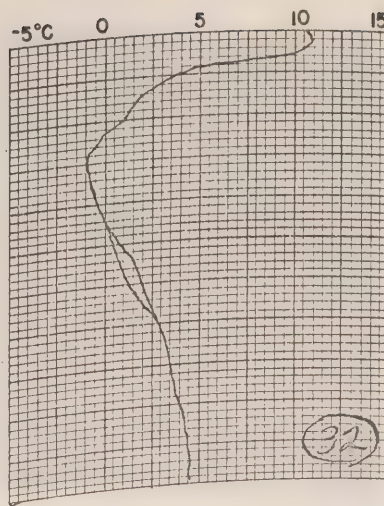
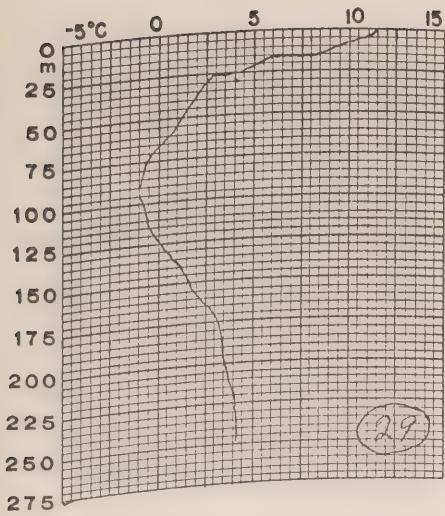
Bathythermograms

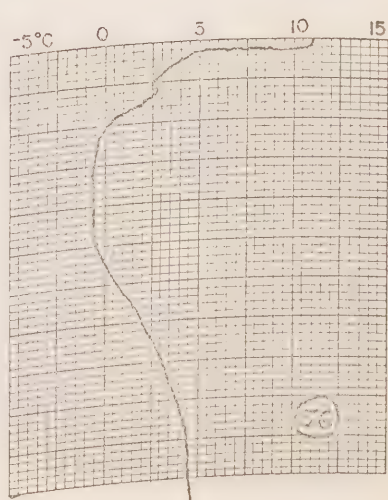
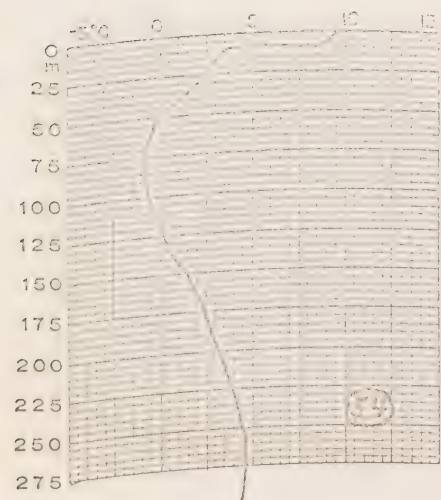
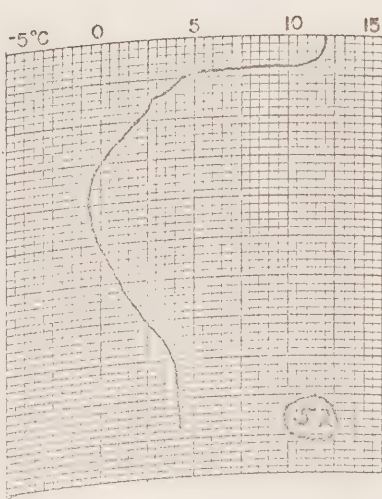
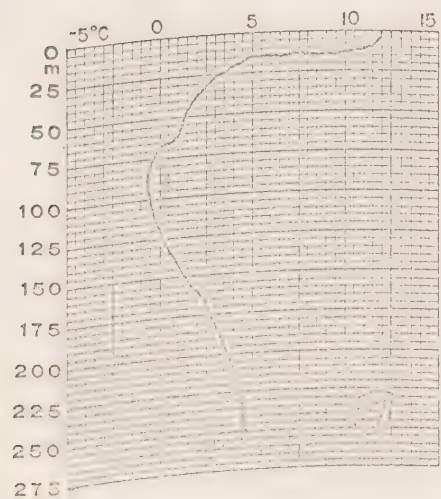
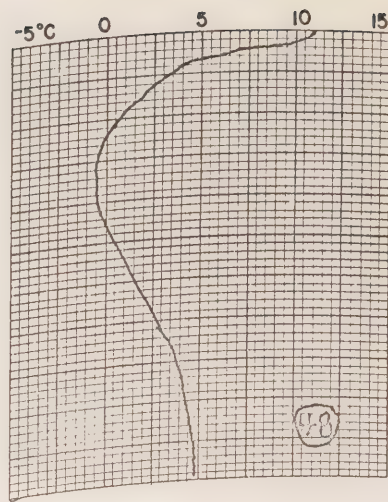
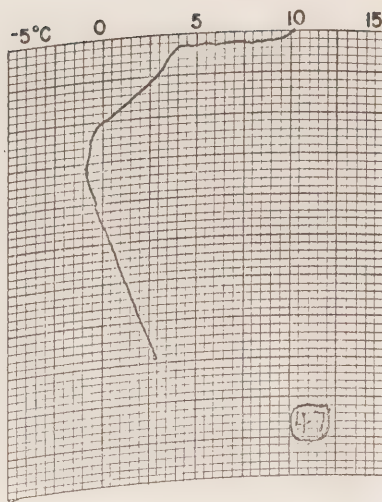
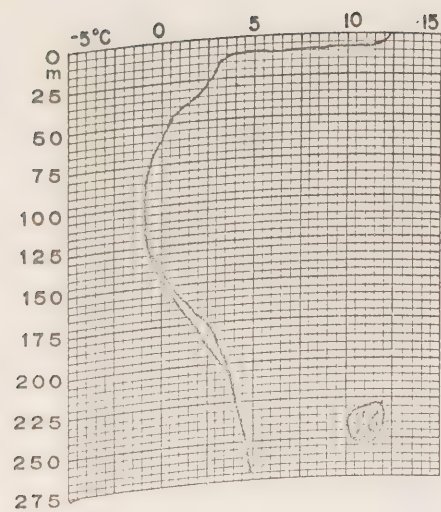


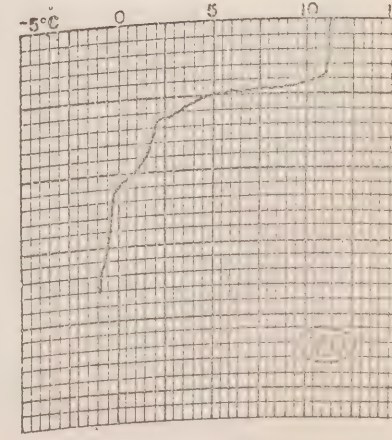
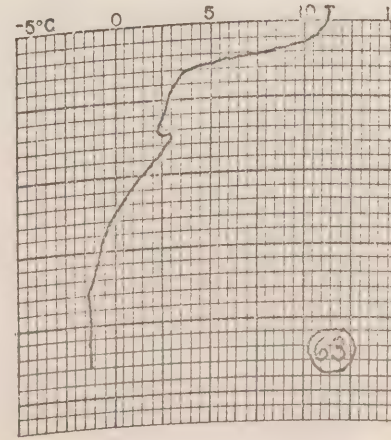
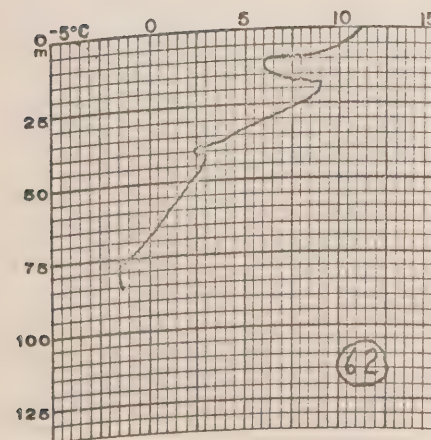
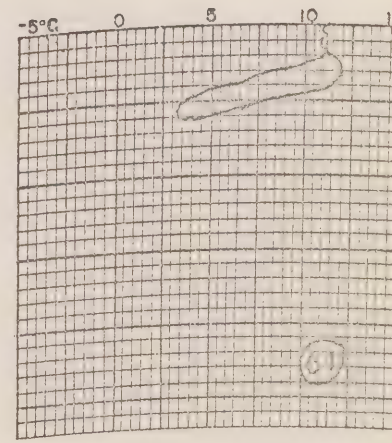
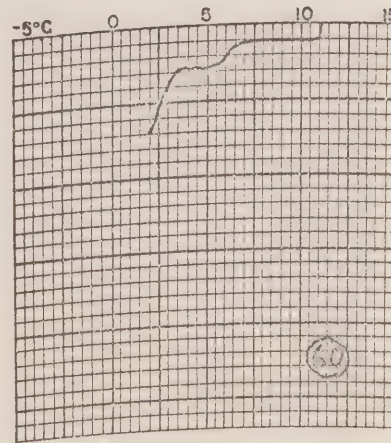
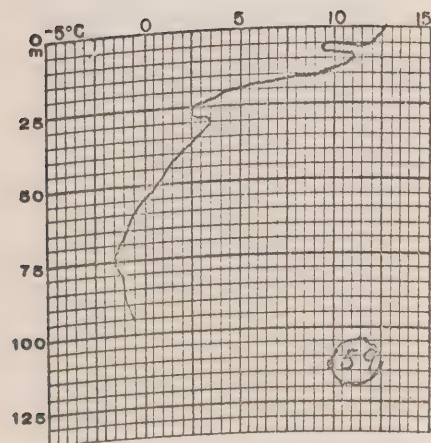
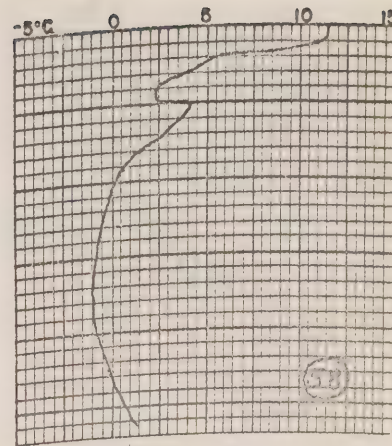
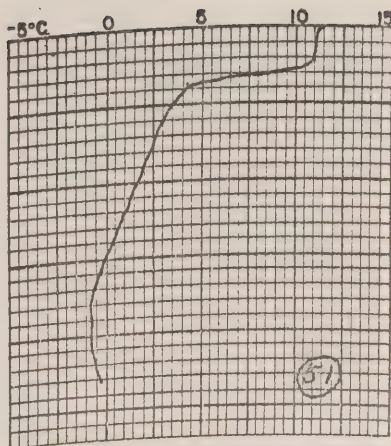
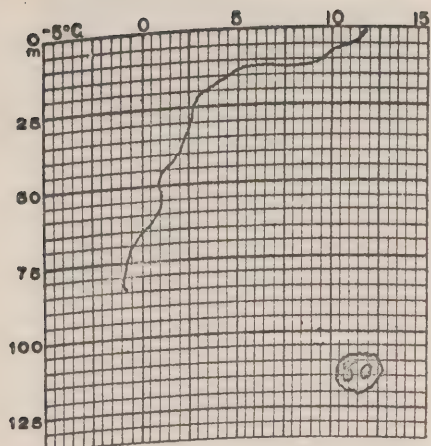


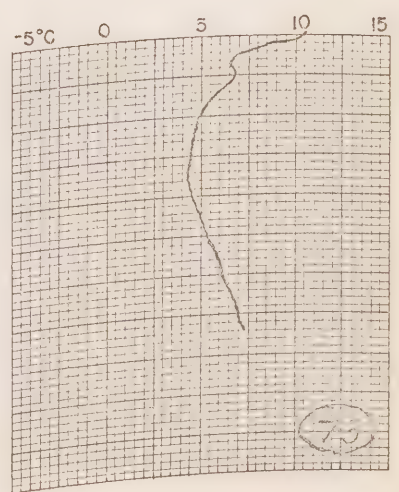
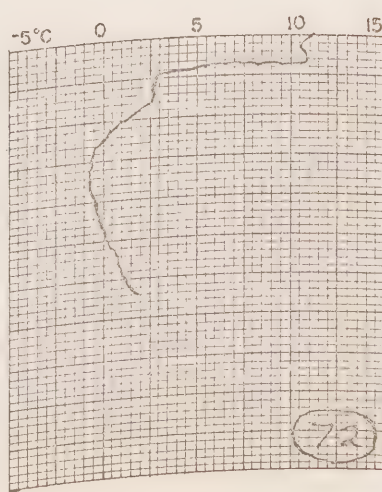
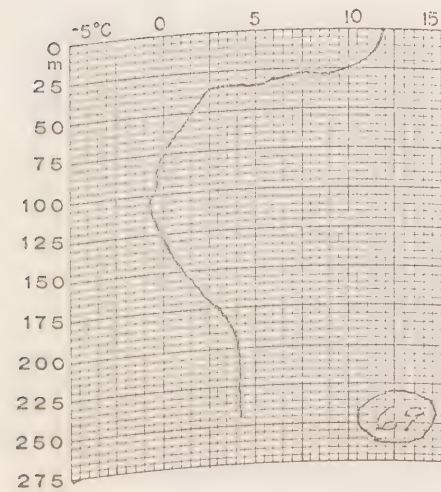
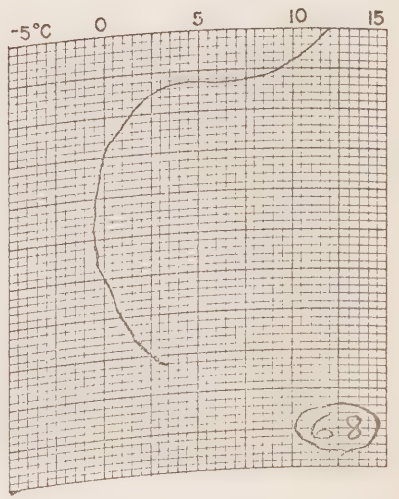
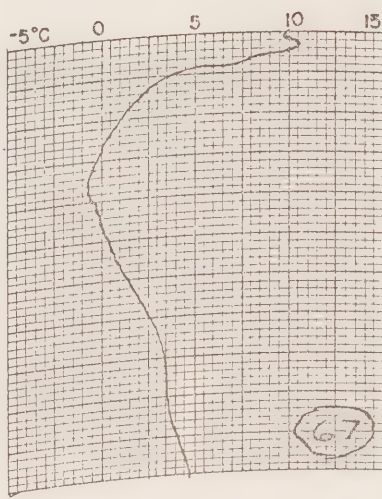
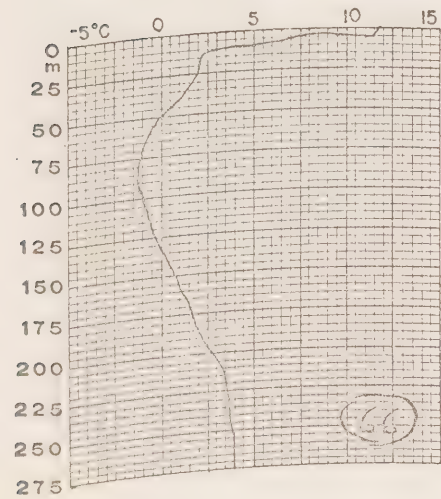
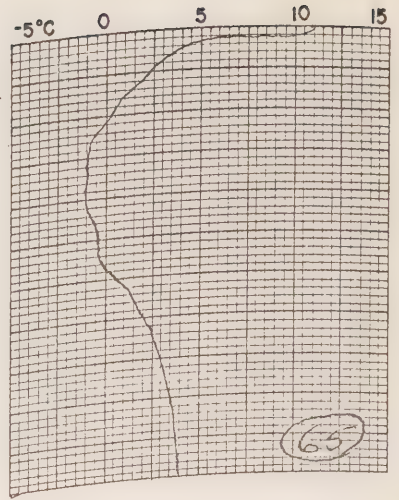
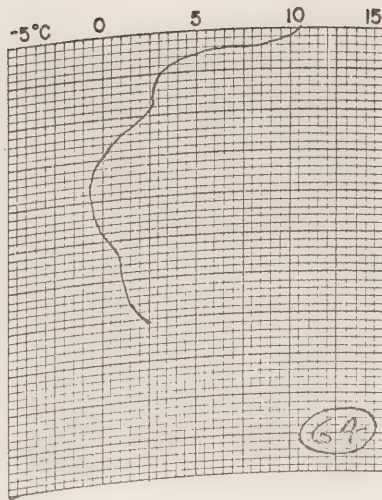
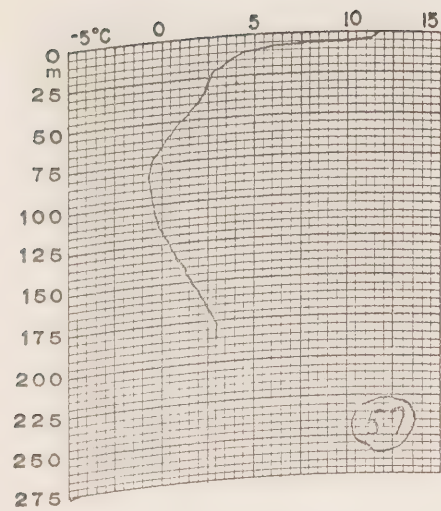


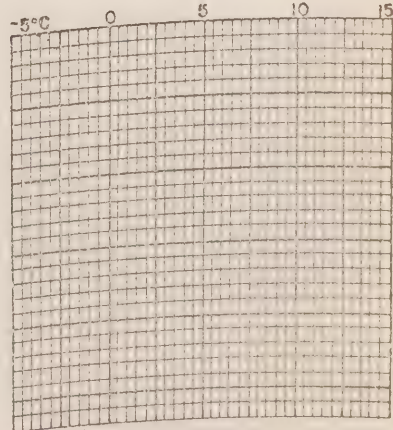
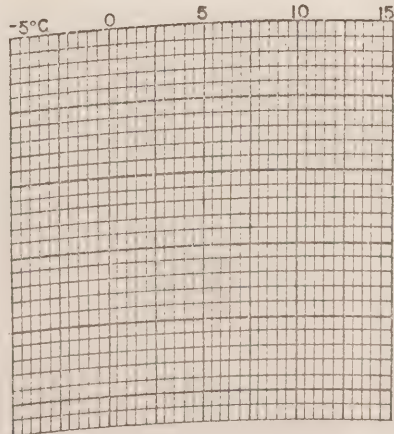
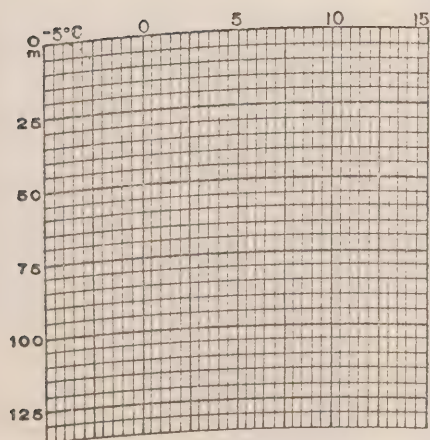
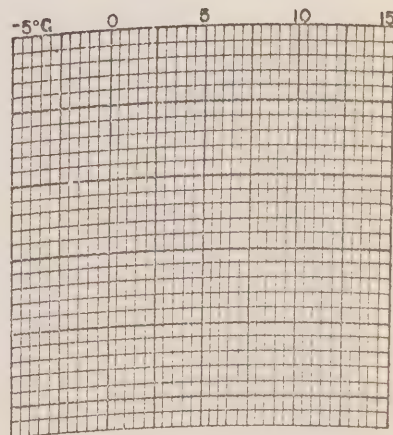
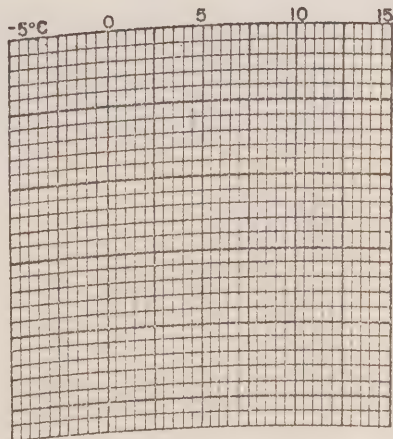
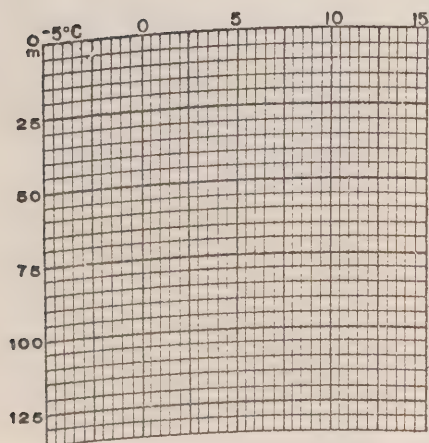
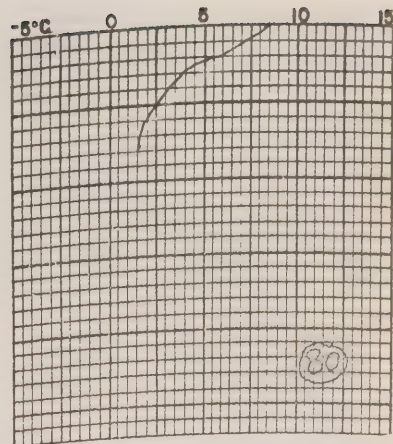
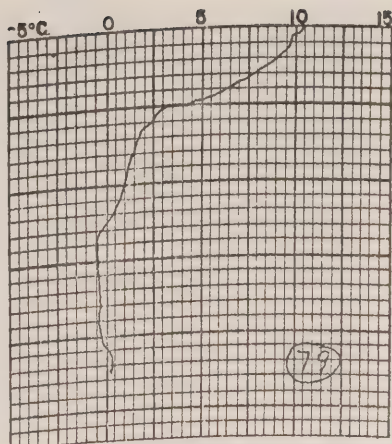
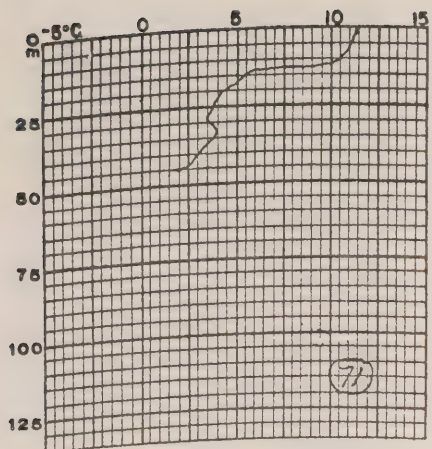


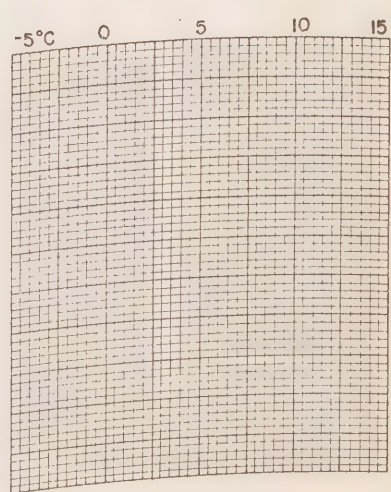
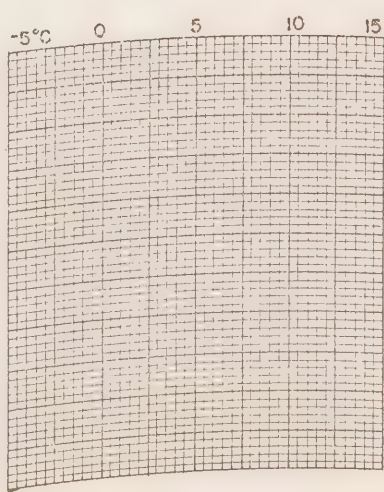
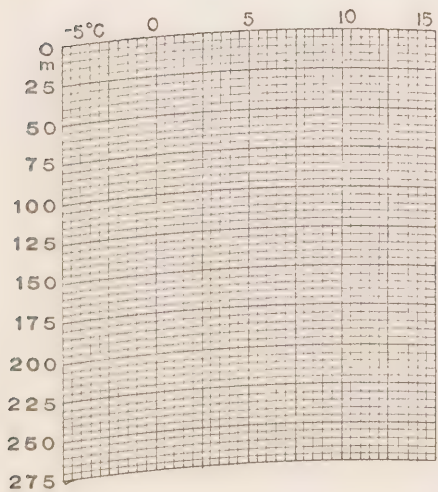
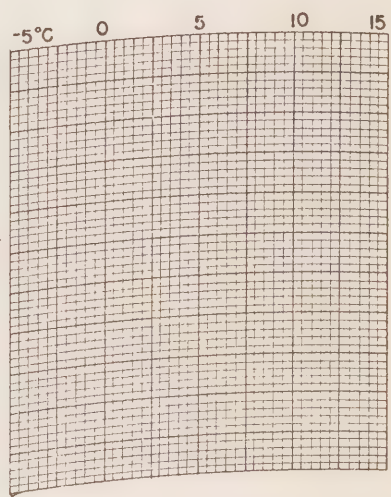
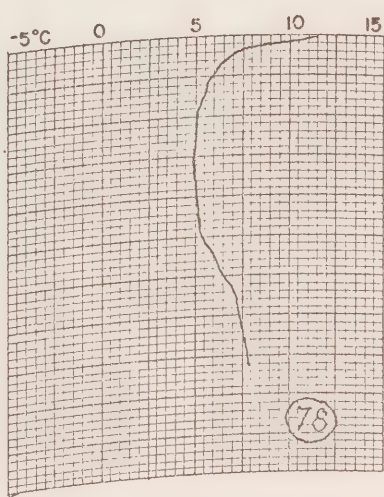
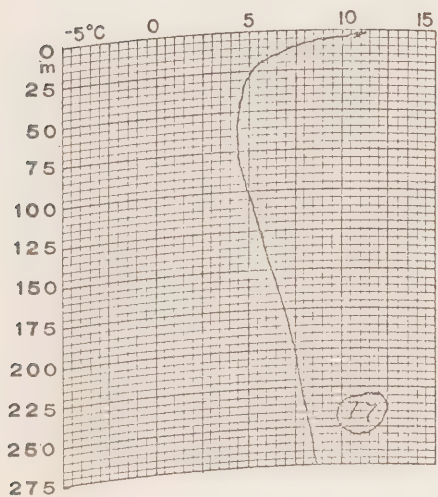
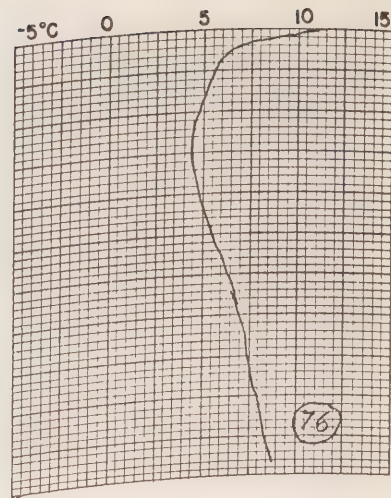
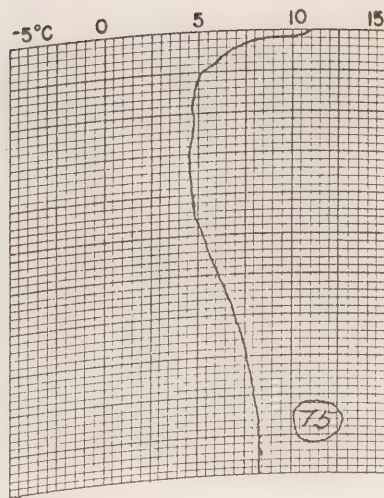
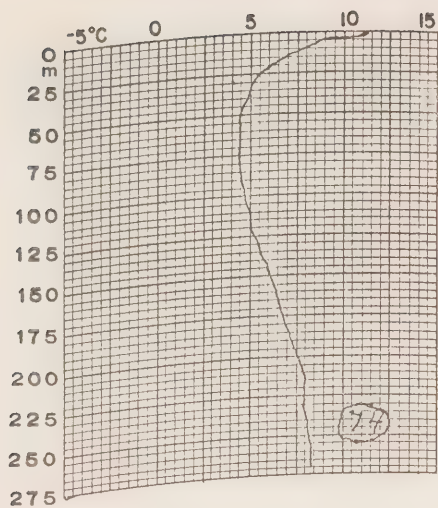












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CANADA

DATA RECORD
**GULF OF ST. LAWRENCE
and HALIFAX SECTION**

August 26 to September 3, 1963

No. 2

1965 Data Record Series

Canadian Oceanographic Data Centre

Programmed by the
Canadian Committee on Oceanography

1965

ROGER DUHAMEL, F. R. S. C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1965

Cat. No. M58-1/1965-2

Price \$1.00

GULF OF ST. LAWRENCE and HALIFAX SECTION

August 26 to September 3, 1963

CODC Reference: 01-63-006

No. 2

1965 Data Record Series

**Canadian Oceanographic Data Centre
615 Booth St., Ottawa, Canada**

Programmed by the Canadian Committee on Oceanography

FISHERIES RESEARCH BOARD OF CANADA

GULF OF ST. LAWRENCE

Ship: C.N.A.V. "SACKVILLE"

Local cruise designation: S-75

Cruise period: August 26 - September 3, 1963

Observers: D.H. Loring

G.P. Cant

G.B. Taylor

L.H. King

G. Vilks

ATLANTIC OCEANOGRAPHIC GROUP

Bedford Institute of Oceanography, Dartmouth, N.S.

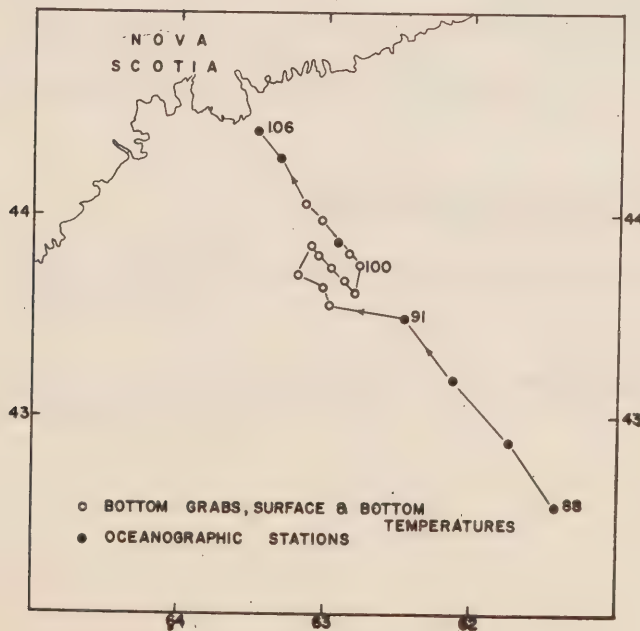
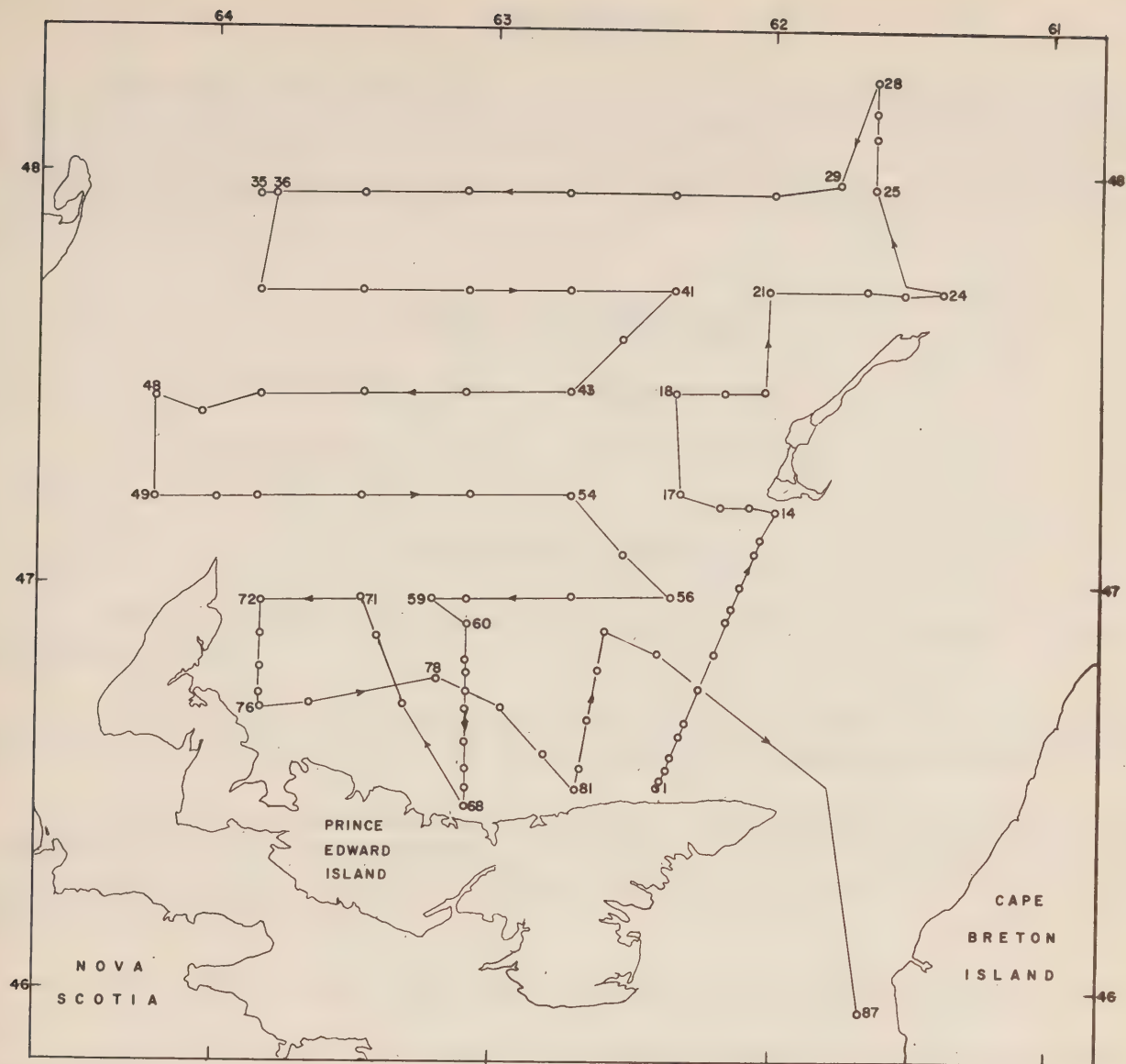
SECTION I

Description of data collection procedures

"SACKVILLE"



Fisheries Research Board



SACKVILLE CRUISE CODE S-78
26/8/63 — 3/9/63

○ BOTTOM GRABS, SURFACE & BOTTOM TEMPERATURES
● OCEANOGRAPHIC STATIONS

INTRODUCTION

The object of the cruise was, first, to undertake a geological sampling program in the southern Gulf of St. Lawrence, second, to evaluate the use of an underwater camera in bottom studies, third, to monitor the oceanographic conditions along the Halifax Section, and fourth, to obtain a number of grab samples for the Geological Survey of Canada in the vicinity of Emerald Bank.

EXTRACT OF CRUISE LOG

Departed Halifax, N.S. - August 26, 1963.

Returned Halifax, N.S. - September 3, 1963.

OBSERVATION PROCEDURES

There was a total of 106 stops including grab samples, hydrographic stations, and camera stations.

A total of 99 bottom samples was collected using a Van Veen grab. Temperature and salinity samples were taken at the surface and bottom at each geological station.

Seven oceanographic stations were occupied on the Halifax Section. Knudsen type reversing water bottles fitted with Richter and Wiese, or Negretti and Zambra, or Yoshino reversing thermometers were used. Surface samples for temperature and salinity were obtained using a plastic bucket.

Meteorological observations were made by the ship's officers at each station.

An Edgerton underwater camera was tested while the grab samples were being taken. This correlative work proved to be very encouraging at the sediment-water interface. Clear, well defined pictures of the "in situ" bottom characteristics were obtained. These pictures provide information on the distribution and nature of the sediment, the general characteristics of the bottom fauna, and in some cases, fish.

LABORATORY PROCEDURES

Salinity analyses were made on the NIO conductivity bridge at the Bedford Institute of Oceanography.

Temperature and meteorological data were checked prior to being entered on the CODC data summary sheets.

BATHYTHERMOGRAPH DATA

A total of 93 BT observations was taken and processed at the BT Data Centre of the Bedford Institute of Oceanography, Dartmouth, N.S.

Section IV depicts the hand-drawn BT traces on standard pre-printed graphs resembling BT calibration grids of several depth ranges. The bathythermogram number corresponds to the consecutive number of the station.

PERSONNELAt Sea:

D.H. Loring	Scientist in Charge
G.P. Cant	
G.B. Taylor	
R.J. Lahey	
L.H. King	
G. Vilks	
G.A. Duncan	
K. Lockett	

Data Reduction:

Compilation of data:	J.R. Chevrier T.A. Holler
Salinity determinations:	M.E. MacLean W. Young
BT processing:	T.A. Grant D.M. MacDonald
Chart compilation:	G.B. Taylor C.C. Cunningham
Geology analyses:	D.H. Loring R.J. Lahey

SECTION II

Description of the machine-generated data record

15
INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "**estimate of precision**" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "**interpolation error estimate**" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "**measurement error estimate**" comprises the "**combined measurement and interpolation error estimate**". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

σ_i = Standard deviation of the combined error estimates at standard oceanographic depth,
 ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $1/3 (V_{i_1} - V_{i_2})$
 γ = Interpolation polynomial coefficient.

Z_j = Observed depth.

Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{q}{d}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the combined measurement and interpolation error estimate. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the interpolation error estimate is given only when $\frac{q}{d} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) WW-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

(1) CRUISE REFERENCE NUMBER:

Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.

(2) CONSECUTIVE NUMBER:

Indicates the chronological order in which the stations were occupied.

(3) LATITUDE:

Indicate the position of the platform at the time of observation.

(4) LONGITUDE:

(5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).

(6) YEAR:

(7) MONTH:

(8) DAY:

(9) HOUR:

The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.

(10) COUNTRY/
INSTITUTE:

The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.

(11) DEPTH:

The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".

(12) MAXIMUM

SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).

00 m - 50 m = 00

51 m - 150 m = 01

151 m - 250 m = 02

etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards):
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage.
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the wind-propagated wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the predominant non-wind-propagated wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE (WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED (WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars; the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677.
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700.
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_2
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01° C. Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 C1\%$, reported in:
 a. 1/100 parts per 1000, or
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

- (8) PO_4 Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
- (9) -P- Total Phosphorus reported to hundredths of microgram-atoms per litre.
- (10) NO_2 Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre – No dissolved nitrogen included.
- (11) NO_3 Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
- (12) SiO_2 Silicate-Silicon reported to tenths of microgram-atoms per litre.
- (13) pH The pH value.

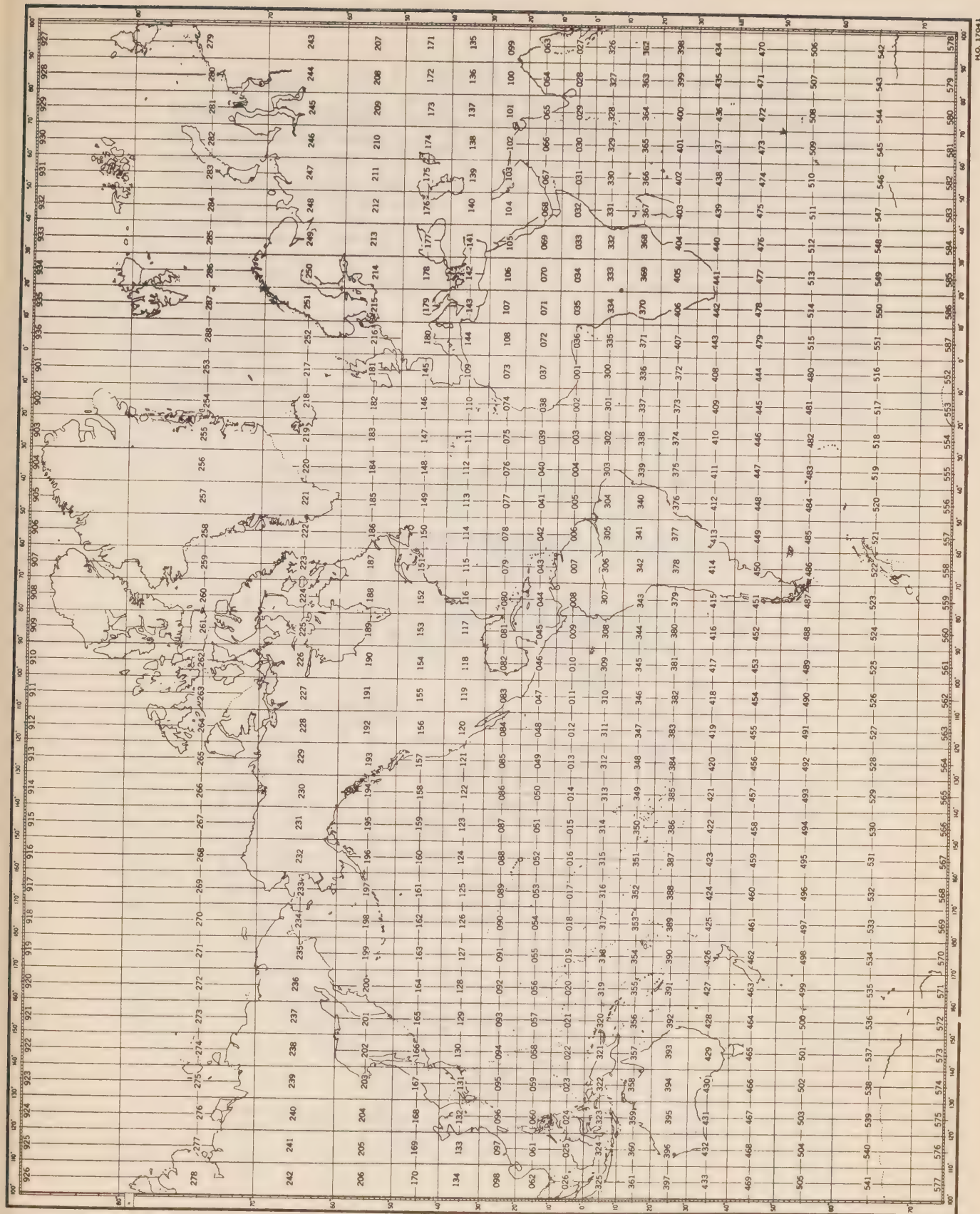
NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY:
- A. The reported salinity values are measured to three decimal places.
 - (i) the interpolation error estimate is less than twice the standard deviation of measurement.
 - the interpolated value is reported to three decimal places (e.g., 30.139).
 - (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 - the interpolated value is reported to two decimal places, and followed by the interpolation error estimate (e.g., 29.23 C).
 - B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 - the interpolated value is reported to two decimal places, and followed by the combined measurement and interpolation error estimate (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "Introduction" to section II of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^p \delta dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = 1/g \int_0^p p \delta dp = \int_0^z \rho p \delta dz$$
- χ is expressed in units of 10^6 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \sigma - \sigma_{35.0.P}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).



MARS DEN SQUARE CHART

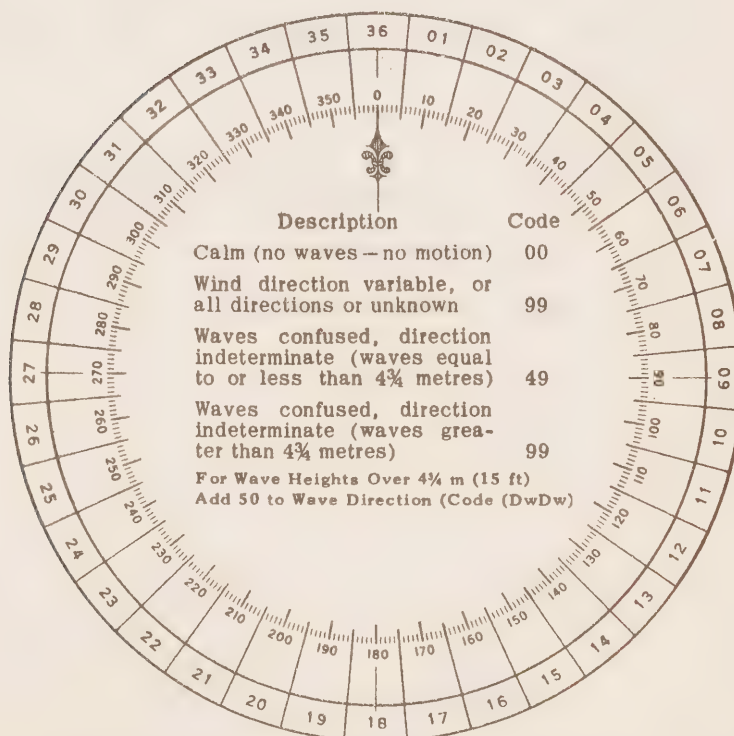
Table 1
CONVERSION
MINUTES TO $\frac{1}{10}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (Pw)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (Hw)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)		0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)		3 6½ m (21 ft)
4	2 m (6½ ft)	Add	4 7 m (22½ ft)
5	2½ m (8 ft)	50	5 7½ m (24 ft)
6	3 m (9½ ft)	to	6 8 m (25½ ft)
7	3½ m (11 ft)	Dw Dw	7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Add
50
to
Dw Dw

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww			
No meteors except photometeors	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
Haze, dust, sand or smoke	03	Clouds generally forming or developing	
	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	More of less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	
ww = 20 - 29			
		Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	
	20	Drizzle (not freezing) or snow grains	not falling as shower(s)
	21	Rain (not freezing)	
	22	Snow	
	23	Rain and snow or ice pellets, type (a)	
	24	Freezing drizzle or freezing rain	
	25	Shower(s) of rain	
	26	Shower(s) of snow, or of rain and snow	
	27	Shower(s) of hail, or of rain and hail	
	28	Fog or ice fog	
	29	Thunderstorm (with or without precipitation)	
ww = 30 - 39			
		Duststorm, sandstorm, drifting or blowing snow	
	30		—has decreased during the preceding hour
	31	Slight or moderate dust-storm or sand-storm	—no appreciable change during the preceding hour
	32		—has begun or has increased during the preceding hour
	33		—has decreased during the preceding hour
	34	Severe dust-storm or sand-storm	—no appreciable change during the preceding hour
	35		—has begun or has increased during the preceding hour
	36	Slight or moderate blowing snow	generally low (below eye level)
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	generally high (above eye level)
	39	Heavy blowing snow	
ww = 40 - 49			
		Fog or ice fog at the time of observation	
	40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	41	Fog or ice fog in patches	
	42	Fog or ice fog, sky visible	has become thinner during the preceding hour
	43	Fog or ice fog, sky invisible	
	44	Fog or ice fog, sky visible	no appreciable change during the preceding hour
	45	Fog or ice fog, sky invisible	
	46	Fog or ice fog, sky visible	has begun or has become thicker during the preceding hour
	47	Fog or ice fog, sky invisible	
	48	Fog, depositing rime, sky visible	
	49	Fog, depositing rime, sky invisible	

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle	
50	Drizzle, not freezing, intermittent
51	Drizzle, not freezing, continuous
52	Drizzle, not freezing, intermittent
53	Drizzle, not freezing, continuous
54	Drizzle, not freezing, intermittent
55	Drizzle, not freezing, continuous
56	Drizzle, freezing, slight
57	Drizzle, freezing, moderate or heavy (dense)
58	Drizzle and rain, slight
59	Drizzle and rain, moderate or heavy
ww = 60 - 69 Rain	
60	Rain, not freezing, intermittent
61	Rain, not freezing, continuous
62	Rain, not freezing, intermittent
63	Rain, not freezing, continuous
64	Rain, not freezing, intermittent
65	Rain, not freezing, continuous
66	Rain, freezing, slight
67	Rain, freezing, moderate or heavy
68	Rain or drizzle and snow, slight
69	Rain or drizzle and snow, moderate or heavy
70 - 79 Solid precipitation not in showers	
ww	
70	Intermittent fall of snow flakes
71	Continuous fall of snow flakes
72	Intermittent fall of snow flakes
73	Continuous fall of snow flakes
74	Intermittent fall of snow flakes
75	Continuous fall of snow flakes
76	Ice prisms (with or without fog)
77	Snow grains (with or without fog)
78	Isolated starlike snow crystals (with or without fog)
79	Ice pellets, type (a)

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm	
80	Rain shower(s), slight
81	Rain shower(s), moderate or heavy
82	Rain shower(s), violent
83	Shower(s) of rain and snow mixed, slight
84	Shower(s) of rain and snow mixed, moderate or heavy
85	Snow shower(s), slight
86	Snow shower(s), moderate or heavy
87	Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed
88	Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder
89	Slight rain at time of observation
90	Moderate or heavy rain at time of observation
91	Slight snow, or rain and snow mixed or hail at time of observation
92	Moderate or heavy snow, or rain and snow mixed or hail at time of observation
93	Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation
94	Thunderstorm, slight or moderate, with hail at time of observation
95	Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation
96	Thunderstorm, combined with duststorm or sandstorm at time of observation
97	Thunderstorm, heavy, with hail at time of observation
98	
99	

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
x	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{5}{8}$ n.m.)
4	1-2 km (approx. $\frac{5}{8}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11C.C.O. Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N.B.
04. Arctic Biological Station, St. Anne de Bellevue, P.Q.
05. Biological Station, St. John's Nfld.
06. Station de Biologie Marine, Grande Riviere, P.Q.
07. Canadian Hydrographic Service.
08. Naval Research Establishment, Dartmouth, N.S.
09. Pacific Naval Laboratory, Esquimalt, B.C.
10. Bedford Institute of Oceanography
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Inland Region, Oceanographic Research, Ottawa.
14. Institute of Oceanography, Dalhousie University.

SECTION III

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Atlantic Oceanographic Group
<u>Observation platform:</u>	C. N. A. V. "Sackville"
<u>Vessel's cruising speed:</u>	12 knots
<u>Total number of stations occupied:</u>	93
<u>Anemometer height above sea level:</u>	11 metres
<u>Barometer readings:</u>	Aneroid Barometer (corrected)
<u>Air temperature</u>	Sling Psychrometer
<u>Wet bulb temperature</u>	Sling Psychrometer
<u>Surface sea water temperature</u>	Bucket sample

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003

C-REF-NO 006	YR 1963	DEPTH 15	WAVES 1 36X2	AIR T 13.6	VIS
CONS. NO 001	MONTH 8	MXSAMPD 00	WAVES 2 36X3	WET B 12.5	STN
LAT 46-296N	DAY 27	NO.DPTH 2	WND-DIR 360	WW-CODE 02	
LON 62-242W	HR 22.0	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1016.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0000	128 8				
221	0011	1222	29498		2231	14915

C-REF-NO 006	YR 1963	DEPTH 26	WAVES 1 49X1	AIR T 13.0	VIS
CONS. NO 002	MONTH 8	MXSAMPD 00	WAVES 2 49XX	WET B 12.5	STN
LAT 46-310N	DAY 27	NO.DPTH 2	WND-DIR 990	WW-CODE 02	
LON 62-240W	HR 22.8	W-COLOR	WND-SPD	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
228	0000	135 8				
229	0022	1170	29548		2244	14899

C-REF-NO 006	YR 1963	DEPTH 37	WAVES 1 49X1	AIR T 12.9	VIS
CONS. NO 003	MONTH 8	MXSAMPD 00	WAVES 2 49XX	WET B 12.5	STN
LAT 46-333N	DAY 27	NO.DPTH 2	WND-DIR 990	WW-CODE 02	
LON 62-225W	HR 23.2	W-COLOR	WND-SPD	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1018.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
232	0000	136 B				
233	0033	1062	29685		2273	14864

C-REF-NO 006	YR 1963	DEPTH 40	WAVES 1 36X2	AIR T 12.2	VIS
CONS. NO 004	MONTH 8	MXSAMPD 00	WAVES 2 36X2	WET B 10.6	STN
LAT 46-350N	DAY 28	NO.DPTH 2	WND-DIR 360	WW-CODE 02	
LON 62-210W	HR 00.1	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1018.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
001	0000	133 B				
002	0036	0754	30118		2353	14754

C-REF-NO 006	YR 1963	DEPTH 51	WAVES 1 36X2	AIR T 12.5	VIS
CONS. NO 005	MONTH 8	MXSAMPD 00	WAVES 2 36X1	WET B 10.5	STN
LAT 46-381N	DAY 28	NO.DPTH 2	WND-DIR 360	WW-CODE 02	
LON 62-188W	HR 00.9	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1019.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
.009	0000	137 B				
010	0047	0298 E	30954		2469	14578

C-REF-NO 006	YR 1963	DEPTH 53	WAVES 1 34X1	AIR T 12.0	VIS
CONS. NO 006	MONTH 8	MXSAMPD 00	WAVES 2 34X1	WET B 09.6	STN
LAT 46-398N	DAY 28	NO.DPTH 2	WND-DIR 340	WW-CODE 01	
LON 62-180W	HR 01.4	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1019.5	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
014	0000	136 B				
015	0049	0194	31130		2490	14535

C-REF-NO 006	YR 1963	DEPTH 58	WAVES 1 34X1	AIR T 12.5	VIS
CONS. NO 007	MONTH 8	MXSAMPD 01	WAVES 2 34X1	WET B 09.5	STN
LAT 46-450N	DAY 28	NO.DPTH 2	WND-DIR 360	WW-CODE 02	
LON 62-150W	HR 02.5	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
025	0000	133 B				
026	0054	0046	31389		2520	14473

C-REF-NO 006	YR 1963	DEPTH 70	WAVES 1 34X1	AIR T 11.8	VIS
CONS. NO 008	MONTH 8	MXSAMPD 01	WAVES 2 34X1	WET B 09.9	STN
LAT 46-507N	DAY 28	NO.DPTH 2	WND-DIR 360	WW-CODE 02	
LON 62-106W	HR 03.5	W-COLOR	WND-SPD 03	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
035	0000	126 B				
037	0066	-0014 B	31704		2548	14452

C-REF-NO 006	YR 1963	DEPTH	58	WAVES 1 36X1	AIR T 11.5	VIS
CONS. NO 009	MONTH 8	MXSAMPD	01	WAVES 2 34X1	WET B 09.2	STN
LAT 46-550N	DAY 28	NO.DPTH	2	WND-DIR 360	WW-CODE 02	
LON 62-095W	HR 04.4	W-COLOR		WND-SPD 03	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
044	0000	123 B				
045	0054	-0003 B	31778		2553	14456

C-REF-NO 006	YR 1963	DEPTH	51	WAVES 1 36X1	AIR T 12.0	VIS
CONS. NO 010	MONTH 8	MXSAMPD	00	WAVES 2 35X1	WET B 10.0	STN
LAT 46-565N	DAY 28	NO.DPTH	2	WND-DIR 360	WW-CODE 02	
LON 62-085W	HR 05.7	W-COLOR		WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1019.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
057	0000	125 B				
058	0047	-0006	31801		2555	14453

C-REF-NO 006	YR 1963	DEPTH 48	WAVES 1 01X1	AIR T 11.3	VIS
CONS. NO 011	MONTH 8	MXSAMPD 00	WAVES 2 36X1	WET B 08.5	STN
LAT 47-000N	DAY 28	NO.DPTH 2	WND-DIR 010	WW-CODE 02	
LON 62-065W	HR 06.5	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
065	0000	135 B				
066	0044	0049	31823		2554	14479

C-REF-NO 006	YR 1963	DEPTH 40	WAVES 1 49XX	AIR T 12.5	VIS
CONS. NO 012	MONTH 8	MXSAMPD 00	WAVES 2 49XX	WET B 09.8	STN
LAT 47-045N	DAY 28	NO.DPTH 2	WND-DIR 360	WW-CODE 02	
LON 62-035W	HR 07.7	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
077	0000	134 B				
078	0036	0188 C	31623		2530	14537

C-REF-NO 006	YR 1963	DEPTH	37	WAVES 1 49X1	AIR T 11.5	VIS
CONS. NO 013	MONTH 8	MXSAMPD	00	WAVES 2 36X1	WET B 09.0	STN
LAT 47-065N	DAY 28	NO.DPTH	2	WND-DIR 990	WW-CODE 02	
LON 62-021W	HR 08.5	W-COLOR		WND-SPD	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
085	0000	133 B				
086	0033	0340	31495		2508	14601

C-REF-NO 006	YR 1963	DEPTH	31	WAVES 1 00X0	AIR T 11.3	VIS
CONS. NO 014	MONTH 8	MXSAMPD	00	WAVES 2 00X0	WET B 09.4	STN
LAT 47-108N	DAY 28	NO.DPTH	2	WND-DIR CALM	WW-CODE 02	
LON 61-597W	HR 09.3	W-COLOR		WND-SPD 00	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1020.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
093	0000	134 B				
094	0027	0898 B	30956		2398	14819

C-REF-NO 006	YR 1963	DEPTH 31	WAVES 1 49X0	AIR T 12.8	VIS
CONS. NO 015	MONTH 8	MXSAMPD 00	WAVES 2 49X0	WET B 10.0	STN
LAT 47-114N	DAY 28	NO.DPTH 2	WND-DIR 990	WW-CODE 02	
LON 62-050W	HR 09.8	W-COLOR	WND-SPD	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
098	0000	136 B				
099	0027	1107	30754		2349	14893

C-REF-NO 006	YR 1963	DEPTH 33	WAVES 1 00X0	AIR T 13.5	VIS
CONS. NO 016	MONTH 8	MXSAMPD 00	WAVES 2 49XX	WET B 11.0	STN
LAT 47-122N	DAY 28	NO.DPTH 2	WND-DIR 990	WW-CODE 01	
LON 62-117W	HR 10.8	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
108	0000	137 B				
109	0029	0918 B	31642		2449	14835

*WAVES NOT COMPATIBLE WITH WIND

C-REF-NO 006	YR 1963	DEPTH 40	WAVES 1 00X0	AIR T 12.6	VIS
CONS. NO 017	MONTH 8	MXSAMPD 00	WAVES 2 23X1	WET B 09.3	STN
LAT 47-127N	DAY 28	NO.DPTH 2	WND-DIR 200	WW-CODE 02	
LON 62-194W	HR 11.5	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1021.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
115	0000	136 B				
116	0036	0114 B	31746		2545	14506

*WAVES NOT COMPATIBLE WITH WIND

C-REF-NO 006	YR 1963	DEPTH 51	WAVES 1 22X1	AIR T 13.5	VIS
CONS. NO 018	MONTH 8	MXSAMPD 00	WAVES 2 22X1	WET B 10.5	STN
LAT 47-280N	DAY 28	NO.DPTH 2	WND-DIR 220	WW-CODE 02	
LON 62-203W	HR 13.6	W-COLOR	WND-SPD 03	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1022.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
136	0000	132 B				
137	0047	0024 C	31906		2562	14469

C-REF-NO 006	YR 1963	DEPTH	37	WAVES 1 22X1	AIR T 13.9	VIS
CONS. NO 019	MONTH 8	MXSAMPD	00	WAVES 2 22X1	WET B 11.5	STN
LAT 47-283N	DAY 28	NO.DPTH	2	WND-DIR 210	WW-CODE 01	
LON 62-100W	HR 14.5	W-COLOR		WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1022.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
145	0000	137 B				
146	0033	0394 B	31455		2500	14624

C-REF-NO 006	YR 1963	DEPTH	31	WAVES 1 21X2	AIR T 13.8	VIS
CONS. NO 020	MONTH 8	MXSAMPD	00	WAVES 2 21X1	WET B 11.5	STN
LAT 47-290N	DAY 28	NO.DPTH	2	WND-DIR 220	WW-CODE 01	
LON 62-012W	HR 16.2	W-COLOR		WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1022.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
162	0000	131 B				
163	0027	1044	30714		2356	14870

C-REF-NO 006	YR 1963	DEPTH 37	WAVES 1 21X1	AIR T 14.0	VIS
CONS. NO 021	MONTH 8	MXSAMPD 00	WAVES 2 21X1	WET B 11.4	STN
LAT 47-440N	DAY 28	NO.DPTH 2	WND-DIR 220	WW-CODE 01	
LON 61-590W	HR 18.8	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1021.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
188	0000	139 B				
189	0033	0219 C	30916		2472	14541

C-REF-NO 006	YR 1963	DEPTH 27	WAVES 1 20X1	AIR T 13.5	VIS
CONS. NO 022	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 11.2	STN
LAT 47-430N	DAY 28	NO.DPTH 2	WND-DIR 200	WW-CODE 01	
LON 61-400W	HR 20.7	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1021.0	CLD-AMT 0	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
207	0000	134 B				
208	0023	0758	31057		2426	14765

C-REF-NO 006	YR 1963	DEPTH 15	WAVES 1 49XX	AIR T 14.0	VIS
CONS. NO 023	MONTH 8	MXSAMPD .00	WAVES 2 49XX	WET B 11.9	STN
LAT 47-427N	DAY 28	NO.DPTH 2	WND-DIR 200	WW-CODE 01	
LON 61-306W	HR 21.5	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO	CLD-AMT 0	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
215	0000	124 B				
216	0011	0881 D	30853		2393	14808

C-REF-NO 006	YR 1963	DEPTH 13	WAVES 1 49X0	AIR T 13.9	VIS
CONS. NO 024	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 11.1	STN
LAT 47-430N	DAY 28	NO.DPTH 2	WND-DIR 200	WW-CODE 02	
LON 61-232W	HR 22.2	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO	CLD-AMT 0	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
222	0000	113 B				
223	0009	1114	30828		2353	14893

C-REF-NO 006	YR 1963	DEPTH 55	WAVES 1 19X3	AIR T 13.0	VIS
CONS. NO 025	MONTH 8	MXSAMPD 01	WAVES 2 18X1	WET B 11.6	STN
LAT 47-580N	DAY 29	NO.DPTH 2	WND-DIR 190	WW-CODE 00	
LON 61-388W	HR 00.8	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
008	0000	126 B				
009	0051	0026	32077		2576	14473

C-REF-NO 006	YR 1963	DEPTH 70	WAVES 1 18X3	AIR T 13.0	VIS
CONS. NO 026	MONTH 8	MXSAMPD 01	WAVES 2 18X1	WET B 11.3	STN
LAT 48-050N	DAY 29	NO.DPTH 2	WND-DIR 180	WW-CODE 00	
LON 61-380W	HR 02.3	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
023	0000	123 B				
024	0066	-0004	32687		2627	14470

C-REF-NO 006	YR 1963	DEPTH 110	WAVES 1 18X3	AIR T 13.6	VIS
CONS. NO 027	MONTH 8	MXSAMPD 01	WAVES 2 18X1	WET B 11.5	STN
LAT 48-090N	DAY 29	NO.DPTH 2	WND-DIR 180	WW-CODE 00	
LON 61-380W	HR 03.3	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
033	0000	126 B				
035	0106	0043	32968		2647	14502

C-REF-NO 006	YR 1963	DEPTH 293	WAVES 1 18X3	AIR T 12.6	VIS
CONS. NO 028	MONTH 8	MXSAMPD 03	WAVES 2 18X1	WET B 11.2	STN
LAT 48-140N	DAY 29	NO.DPTH 2	WND-DIR 180	WW-CODE 00	
LON 61-380W	HR 04.3	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
043	0000	119 B				
045	0289	0418 B	34188		2714	14713

C-REF-NO 006	YR 1963	DEPTH	58	WAVES 1 18X3	AIR T 14.5	VIS
CONS. NO 029	MONTH 8	MXSAMPD	01	WAVES 2 18X2	WET B 12.1	STN
LAT 47-590N	DAY 29	NO.DPTH	2	WND-DIR 180	WW-CODE 00	
LON 61-460W	HR 06.4	W-COLOR		WND-SPD 08	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1019.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
064	0000	120 B				
065	0054	-0012	32441		2607	14461

C-REF-NO 006	YR 1963	DEPTH	51	WAVES 1 18X2	AIR T 13.5	VIS
CONS. NO 030	MONTH 8	MXSAMPD	00	WAVES 2 00X0	WET B 12.8	STN
LAT 47-580N	DAY 29	NO.DPTH	2	WND-DIR 180	WW-CODE 00	
LON 62-000W	HR 07.9	W-COLOR		WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1018.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
079	0000	132 B				
080	0047	0038 C	31934		2564	14476

C-REF-NO 006	YR 1963	DEPTH 78	WAVES 1 18X2	AIR T 13.0	VIS
CONS. NO 031	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 12.2	STN
LAT 47-580N	DAY 29	NO.DPTH 2	WND-DIR 180	WW-CODE 03	
LON 62-215W	HR 09.6	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1018.0	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
096	0000	129 B				
097	0074	-0015 B	32604		2620	14465

C-REF-NO 006	YR 1963	DEPTH 77	WAVES 1 18X4	AIR T 13.0	VIS
CONS. NO 032	MONTH 8	MXSAMPD 01	WAVES 2 18X1	WET B 12.0	STN
LAT 47-580N	DAY 29	NO.DPTH 2	WND-DIR 180	WW-CODE 03	
LON 62-433W	HR 11.5	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1017.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
115	0000	127 B				
116	0073		32383			

C-REF-NO 006	YR 1963	DEPTH	55	WAVES 1 18X3	AIR T 13.2	VIS
CONS. NO 033	MONTH 8	MXSAMPD	01	WAVES 2 18X1	WET B 12.6	STN
LAT 47-579N	DAY 29	NO.DPTH	2	WND-DIR 180	WW-CODE 01	
LON 63-070W	HR 13.7	W-COLOR		WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1016.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
137	0000	124 B				
138	0051	-0011	32165		2585	14457

C-REF-NO 006	YR 1963	DEPTH	64	WAVES 1 18X3	AIR T 14.0	VIS
CONS. NO 034	MONTH 8	MXSAMPD	01	WAVES 2 18X2	WET B 12.5	STN
LAT 47-580N	DAY 29	NO.DPTH	2	WND-DIR 180	WW-CODE 03	
LON 63-280W	HR 15.4	W-COLOR		WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1015.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
154	0000	122 B				
155	0060	0027 B	32260		2591	14477

C-REF-NO 006	YR 1963	DEPTH	79	WAVES 1 18X3	AIR T 14.2	VIS
CONS. NO 035	MONTH 8	MXSAMPD	01	WAVES 2 18X2	WET B 13.1	STN
LAT 47-580N	DAY 29	NO.DPTH	2	WND-DIR 180	WW-CODE 03	
LON 63-503W	HR 17.2	W-COLOR		WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1014.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
172	0000	128 B				
173	0075	0028 B	32342		2597	14481

C-REF-NO 006	YR 1963	DEPTH	90	WAVES 1 17X3	AIR T 13.9	VIS
CONS. NO 036	MONTH 8	MXSAMPD	01	WAVES 2 17X3	WET B 13.4	STN
LAT 47-581N	DAY 29	NO.DPTH	2	WND-DIR 170	WW-CODE 02	
LON 63-469W	HR 18.2	W-COLOR		WND-SPD 08	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1012.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
182	0000	128 B				
183	0086	0014	32427		2605	14478

C-REF-NO 006	YR 1963	DEPTH 62	WAVES 1 18X2	AIR T 14.5	VIS
CONS. NO 037	MONTH 8	MXSAMPD 01	WAVES 2 18X1	WET B	STN
LAT 47-427N	DAY 29	NO.DPTH 2	WND-DIR 180	WW-CODE 03	
LON 63-510W	HR 19.8	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1012.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	128 B				
199	0058	0056	32085		2575	14488

C-REF-NO 006	YR 1963	DEPTH 73	WAVES 1 18X2	AIR T 16.0	VIS
CONS. NO 038	MONTH 8	MXSAMPD 01	WAVES 2 49XX	WET B 15.0	STN
LAT 47-430N	DAY 29	NO.DPTH 2	WND-DIR 180	WW-CODE 03	
LON 63-285W	HR 21.5	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1012.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
215	0000	130 C				
216	0069	0004	32387		2602	14470

C-REF-NO 006	YR 1963	DEPTH 60	WAVES 1 18X2	AIR T 14.6	VIS
CONS. NO 039	MONTH 8	MXSAMPD 01	WAVES 2 18X1	WET B 14.0	STN
LAT 47-425N	DAY 29	NO.DPTH 2	WND-DIR 180	WW-CODE 02	
LON 63-050W	HR 23.3	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1012.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
233	0000	124 B				
234	0056	0001 C	32225		2589	14464

C-REF-NO 006	YR 1963	DEPTH 57	WAVES 1 21X3	AIR T 15.0	VIS
CONS. NO 040	MONTH 8	MXSAMPD 01	WAVES 2 21X1	WET B 14.0	STN
LAT 47-428N	DAY 30	NO.DPTH 2	WND-DIR 210	WW-CODE 60	
LON 62-440W	HR 00.8	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1012.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
008	0000	131 B				
009	0053	-0010 B	32000		2571	14455

C-REF-NO 006	YR 1963	DEPTH 55	WAVES 1 19X2	AIR T 14.9	VIS
CONS. NO 041	MONTH 8	MXSAMPD 01	WAVES 2 19X1	WET B 13.5	STN
LAT 47-424N	DAY 30	NO.DPTH 2	WND-DIR 190	WW-CODE 21	
LON 62-213W	HR 02.6	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1013.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
026	0000	129 B				
027	0051	0014 B	31956		2567	14465

C-REF-NO 006	YR 1963	DEPTH 71	WAVES 1 19X3	AIR T 14.5	VIS
CONS. NO 042	MONTH 8	MXSAMPD 01	WAVES 2 19X3	WET B 13.5	STN
LAT 47-360N	DAY 30	NO.DPTH 2	WND-DIR 190	WW-CODE 02	
LON 62-321W	HR 03.9	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1012.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
039	0000	132 B				
040	0067	-0011 B	32116		2581	14459

C-REF-NO 006	YR 1963	DEPTH	51	WAVES 1 19X4	AIR T 13.5	VIS
CONS. NO 043	MONTH 8	MXSAMPD	00	WAVES 2 19X3	WET B	STN
LAT 47-290N	DAY 30	NO.DPTH	2	WND-DIR 190	WW-CODE 53	
LON 62-440W	HR 05.5	W-COLOR		WND-SPD 09	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1012.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
055	0000	128 B				
056	0047	-0017	31872		2561	14449

C-REF-NO 006	YR 1963	DEPTH	60	WAVES 1 21X3	AIR T 13.5	VIS
CONS. NO 044	MONTH 8	MXSAMPD	01	WAVES 2 49XX	WET B	STN
LAT 47-280N	DAY 30	NO.DPTH	2	WND-DIR 210	WW-CODE 53	
LON 63-065W	HR 07.3	W-COLOR		WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1012.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
073	0000	125 B				
074	0056	0031	31669		2543	14470

C-REF-NO 006	YR 1963	DEPTH 68	WAVES 1 21X2	AIR T 14.0	VIS
CONS. NO 045	MONTH 8	MXSAMPD 01	WAVES 2 21X1	WET B 14.0	STN
LAT 47-280N	DAY 30	NO.DPTH 2	WND-DIR 210	WW-CODE 03	
LON 63-280W	HR 09.1	W-COLOR	WND-SPD 04	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1012.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
091	0000	125 B				
092	0064	0030	32207		2586	14478

C-REF-NO 006	YR 1963	DEPTH 64	WAVES 1 24X1	AIR T 14.5	VIS
CONS. NO 046	MONTH 8	MXSAMPD 01	WAVES 2 49XX	WET B 14.1	STN
LAT 47-280N	DAY 30	NO.DPTH 2	WND-DIR 240	WW-CODE 03	
LON 63-505W	HR 10.8	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1012.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
108	0000	134 B				
109	0060	0130 C	31814		2549	14518

C-REF-NO 006	YR 1963	DEPTH 33	WAVES 1 26X1	AIR T 15.1	VIS
CONS. NO 047	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 14.6	STN
LAT 47-250N	DAY 30	NO.DPTH 2	WND-DIR 260	WW-CODE 02	
LON 64-030W	HR 11.9	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1013.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
119	0000	138 B				
120	0029	1238	29777		2250	14927

C-REF-NO 006	YR 1963	DEPTH 51	WAVES 1 32X1	AIR T 14.9	VIS
CONS. NO 048	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 14.2	STN
LAT 47-270N	DAY 30	NO.DPTH 2	WND-DIR 320	WW-CODE 01	
LON 64-130W	HR 13.0	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1013.0	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
130	0000	137 B				
131	0047	0166 B	31552		2526	14528

C-REF-NO 006	YR 1963	DEPTH	37	WAVES 1 02X1	AIR T 14.9	VIS
CONS. NO 049	MONTH 8	MXSAMPD	00	WAVES 2 00X0	WET B 14.1	STN
LAT 47-122N	DAY 30	NO.DPTH	2	WND-DIR 020	WW-CODE 03	
LON 64-135W	HR 14.6	W-COLOR		WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1014.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
146	0000	141 B				
147	0033	0944	29659		2290	14820

C-REF-NO 006	YR 1963	DEPTH	27	WAVES 1 02X0	AIR T 14.4	VIS
CONS. NO 050	MONTH 8	MXSAMPD	00	WAVES 2 02X0	WET B 13.0	STN
LAT 47-122N	DAY 30	NO.DPTH	2	WND-DIR 020	WW-CODE 01	
LON 63-599W	HR 15.7	W-COLOR		WND-SPD 03	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1014.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
157	0000	139 B				
158	0023	0904	29765		2305	14805

C-REF-NO 006	YR 1963	DEPTH 37	WAVES 1 02X0	AIR T 14.2	VIS
CONS. NO 051	MONTH 8	MXSAMPD 00	WAVES 2 02X0	WET B 13.0	STN
LAT 47-130N	DAY 30	NO.DPTH 2	WND-DIR 020	WW-CODE 01	
LON 63-500W	HR 16.5	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1014.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
165	0000	140 B				
166	0033	0854	29864		2320	14789

C-REF-NO 006	YR 1963	DEPTH 55	WAVES 1 02X0	AIR T 14.0	VIS
CONS. NO 052	MONTH 8	MXSAMPD 01	WAVES 2 02X0	WET B 12.5	STN
LAT 47-123N	DAY 30	NO.DPTH 2	WND-DIR 020	WW-CODE 02	
LON 63-280W	HR 18.3	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1014.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
183	0000	128 B				
184	0051	0071 D	31909		2560	14491

C-REF-NO 006	YR 1963	DEPTH 60	WAVES 1 04X1	AIR T 14.3	VIS
CONS. NO 053	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 12.6	STN
LAT 47-135N	DAY 30	NO.DPTH 2	WND-DIR 040	WW-CODE 02	
LON 63-060W	HR 19.9	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1014.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	128 B				
200	0056	-0010 B	32069		2577	14457

C-REF-NO 006	YR 1963	DEPTH 58	WAVES 1 03X2	AIR T 14.0	VIS
CONS. NO 054	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 12.6	STN
LAT 47-126N	DAY 30	NO.DPTH 2	WND-DIR 030	WW-CODE 02	
LON 62-442W	HR 21.4	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1015.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
214	0000	127 B				
215	0054	-0004 C	31943		2567	14458

C-REF-NO 006	YR 1963	DEPTH 70	WAVES 1 03X2	AIR T 13.5	VIS
CONS. NO 055	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 12.4	STN
LAT 47-045N	DAY 30	NO.DPTH 2	WND-DIR 030	WW-CODE 02	
LON 62-322W	HR 22.9	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1015.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
229	0000	128 B				
230	0066	0002 C	31855		2559	14461

C-REF-NO 006	YR 1963	DEPTH 64	WAVES 1 03X1	AIR T 13.8	VIS
CONS. NO 056	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 13.0	STN
LAT 46-578N	DAY 31	NO.DPTH 2	WND-DIR 030	WW-CODE 02	
LON 62-222W	HR 00.1	W-COLOR	WND-SPD 04	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1015.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
001	0000	130 B				
002	0060	-0016	31626		2542	14449

C-REF-NO 006	YR 1963	DEPTH	64	WAVES 1 05X1	AIR T 13.5	VIS
CONS. NO 057	MONTH 8	MXSAMPD	01	WAVES 2 00X0	WET B 12.5	STN
LAT 46-578N	DAY 31	NO.DPTH	2	WND-DIR 050	WW-CODE 02	
LON 62-440W	HR 01.6	W-COLOR		WND-SPD 04	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1015.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
016	0000	129 B				
017	0060	-0030	31604		2540	14442

C-REF-NO 006	YR 1963	DEPTH	60	WAVES 1 05X1	AIR T 13.5	VIS
CONS. NO 058	MONTH 8	MXSAMPD	01	WAVES 2 00X0	WET B 12.3	STN
LAT 46-577N	DAY 31	NO.DPTH	2	WND-DIR 050	WW-CODE 02	
LON 63-062W	HR 03.1	W-COLOR		WND-SPD 03	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1015.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
031	0000	128 B				
032	0056	-0013 B	31709		2548	14450

C-REF-NO 006	YR 1963	DEPTH 60	WAVES 1 05X1	AIR T 13.0	VIS
CONS. NO 059	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 12.0	STN
LAT 46-580N	DAY 31	NO.DPTH 2	WND-DIR 050	WW-CODE 02	
LON 63-135W	HR 03.8	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1015.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
038	0000	132 B				
039	0056	0116	31783		2548	14510

C-REF-NO 006	YR 1963	DEPTH 60	WAVES 1 05X1	AIR T 13.2	VIS
CONS. NO 060	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 12.2	STN
LAT 46-545N	DAY 31	NO.DPTH 2	WND-DIR 050	WW-CODE 02	
LON 63-060W	HR 04.6	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1015.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
046	0000	126 B				
047	0056	-0008	31669		2545	14452

C-REF-NO 006	YR 1963	DEPTH 55	WAVES 1 06X1	AIR T 13.0	VIS
CONS. NO 061	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 12.6	STN
LAT 46-490N	DAY 31	NO.DPTH 2	WND-DIR 060	WW-CODE 02	
LON 63-060W	HR 05.3	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1015.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
053	0000	132 B				
054	0051	0149 B	31697		2539	14523

C-REF-NO 006	YR 1963	DEPTH 51	WAVES 1 06X1	AIR T 13.5	VIS
CONS. NO 062	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 12.6	STN
LAT 46-474N	DAY 31	NO.DPTH 2	WND-DIR 060	WW-CODE 02	
LON 63-060W	HR 05.9	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1015.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
059	0000	134 B				
060	0047	0197	31556		2524	14542

C-REF-NO 006	YR 1963	DEPTH 46	WAVES 1 06X2	AIR T 13.1	VIS
CONS. NO 063	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 12.9	STN
LAT 46-445N	DAY 31	NO.DPTH 2	WND-DIR 060	WW-CODE 02	
LON 63-063W	HR 06.6	W-COLOR	WND-SPD 04	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1015.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
066	0000	137 B				
067	0042	0272	31345		2502	14571

C-REF-NO 006	YR 1963	DEPTH 42	WAVES 1 06X2	AIR T 13.0	VIS
CONS. NO 064	MONTH 8	MXSAMPD 00	WAVES 2 06X0	WET B 12.9	STN
LAT 46-424N	DAY 31	NO.DPTH 2	WND-DIR 060	WW-CODE 02	
LON 63-062W	HR 07.4	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1013.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
074	0000	133 B				
075	0038	0300 B	31235		2491	14581

C-REF-NO 006	YR 1963	DEPTH	40	WAVES 1 06X2	AIR T 13.6	VIS
CONS. NO 065	MONTH 8	MXSAMPD	00	WAVES 2 00X0	WET B 13.5	STN
LAT 46-378N	DAY 31	NO.DPTH	2	WND-DIR 060	WW-CODE 60	
LON 63-062W	HR 08.3	W-COLOR		WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1013.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
083	0000	137 B				
084	0036	0384	30945		2460	14613

C-REF-NO 006	YR 1963	DEPTH	37	WAVES 1 08X2	AIR T 14.0	VIS
CONS. NO 066	MONTH 8	MXSAMPD	00	WAVES 2 00X0	WET B 13.8	STN
LAT 46-340N	DAY 31	NO.DPTH	2	WND-DIR 080	WW-CODE 21	
LON 63-063W	HR 09.0	W-COLOR		WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1013.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
090	0000	142 B				
091	0033	0374	30784		2449	14606

C-REF-NO 006	YR 1963	DEPTH	24	WAVES 1 07X2	AIR T 14.0	VIS
CONS. NO 067	MONTH 8	MXSAMPD	00	WAVES 2 00X0	WET B 13.9	STN
LAT 46-299N	DAY 31	NO.DPTH	2	WND-DIR 070	WW-CODE 40	
LON 63-066W	HR 10.8	W-COLOR		WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1012.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
108	0000	142 B				
109	0020	1366	29161		2178	14962

C-REF-NO 006	YR 1963	DEPTH	12	WAVES 1 08X2	AIR T 14.0	VIS
CONS. NO 068	MONTH 8	MXSAMPD	00	WAVES 2 00X0	WET B 14.0	STN
LAT 46-277N	DAY 31	NO.DPTH	2	WND-DIR 080	WW-CODE 40	
LON 63-094W	HR 11.4	W-COLOR		WND-SPD 07	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1011.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
114	0000	145 B				
115	0008	1424 B	29098		2161	14978

C-REF-NO 006	YR 1963	DEPTH	37	WAVES 1 10X1	AIR T 14.5	VIS
CONS. NO 069	MONTH 8	MXSAMPC	00	WAVES 2 00X0	WET B 14.2	STN
LAT 46-425N	DAY 31	NO.DPTH	2	WND-DIR 100	WW-CODE 40	
LON 63-189W	HR 14.9	W-COLOR		WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1011.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
149	0000	144 B				
150	0033	0442	30744		2439	14635

C-REF-NO 006	YR 1963	DEPTH	42	WAVES 1 10X1	AIR T 14.0	VIS
CONS. NO 070	MONTH 8	MXSAMPC	00	WAVES 2 00X0	WET B 14.0	STN
LAT 46-525N	DAY 31	NO.DPTH	2	WND-DIR 100	WW-CODE 44	
LON 63-250W	HR 16.4	W-COLOR		WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1010.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
164	0000	137 B				
165	0038	0532 B	30480		2409	14669

C-REF-NO 006	YR 1963	DEPTH 42	WAVES 1 10X1	AIR T 13.9	VIS
CONS. NO 071	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 13.9	STN
LAT 46-580N	DAY 31	NO.DPTH 2	WND-DIR 100	WW-CODE 44	
LON 63-280W	HR 17.3	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1010.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
173	0000	135 B				
174	0038	0490	30633		2425	14654

C-REF-NO 006	YR 1963	DEPTH 31	WAVES 1 49XX	AIR T 15.2	VIS
CONS. NO 072	MONTH 8	MXSAMPD 00	WAVES 2 49XX	WET B 14.9	STN
LAT 46-580N	DAY 31	NO.DPTH 2	WND-DIR 990	WW-CODE 42	
LON 63-500W	HR 19.0	W-COLOR	WND-SPD	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1009.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	150 B				
191	0027	0916	29740		2301	14810

C-REF-NO 006	YR 1963	DEPTH 27	WAVES 1 10X0	AIR T 15.1	VIS
CONS. NO 073	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 14.8	STN
LAT 46-530N	DAY 31	NO.DPTH 2	WND-DIR 990	WW-CODE 45	
LON 63-500W	HR 19.8	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1009.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	149 B				
199	0023	1076	29501		2257	14865

C-REF-NO 006	YR 1963	DEPTH 24	WAVES 1 00X0	AIR T 15.0	VIS
CONS. NO 074	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 15.0	STN
LAT 46-478N	DAY 31	NO.DPTH 2	WND-DIR 990	WW-CODE 42	
LON 63-500W	HR 20.8	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1008.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
208	0000	150 B				
209	0020	1478	28953		2139	14996

#WAVES NOT COMPATIBLE WITH WIND

C-REF-NO 006	YR 1963	DEPTH 18	WAVES 1 00X0	AIR T 15.0	VIS
CONS. NO 075	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 15.0	STN
LAT 46-433N	DAY 31	NO.DPTH 2	WND-DIR 990	WW-CODE 42	
LON 63-500W	HR 21.3	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1008.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
213	0000	153 B				
214	0014	1129	29460		2245	14882

‡WAVES NOT COMPATIBLE WITH WIND

C-REF-NO 006	YR 1963	DEPTH 11	WAVES 1 32X0	AIR T 15.2	VIS
CONS. NO 076	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 15.2	STN
LAT 46-415N	DAY 31	NO.DPTH 2	WND-DIR 320	WW-CODE 42	
LON 63-502W	HR 21.8	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1008.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
218	0000	149 B				
219	0007	1400	29051		2163	14970

C-REF-NO 006	YR 1963	DEPTH	26	WAVES 1 00X0	AIR T 15.0	VIS
CONS. NO 077	MONTH 8	MXSAMPD	00	WAVES 2 00X0	WET B 15.0	STN
LAT 46-425N	DAY 31	NO.DPTH	2	WND-DIR 990	WW-CODE 44	
LON 63-390W	HR 22.8	W-COLOR		WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1008.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
228	0000	146 B				
229	0022	1326 B	29268		2194	14950

#WAVES NOT COMPATIBLE WITH WIND

C-REF-NO 006	YR 1963	DEPTH	42	WAVES 1 00X0	AIR T 17.2	VIS
CONS. NO 078	MONTH 9	MXSAMPD	00	WAVES 2 00X0	WET B 16.0	STN
LAT 46-463N	DAY 01	NO.DPTH	2	WND-DIR 990	WW-CODE 40	
LON 63-120W	HR 00.7	W-COLOR		WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1008.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
007	0000	138 B				
008	0038	0278	31273		2496	14572

#WAVES NOT COMPATIBLE WITH WIND

C-REF-NO 006	YR 1963	DEPTH 40	WAVES 1 27X0	AIR T 14.9	VIS
CONS. NO 079	MONTH 9	MXSAMPD 00	WAVES 2 00X0	WET B 14.9	STN
LAT 46-415N	DAY 01	NO.DPTH 2	WND-DIR 270	WW-CODE 40	
LON 62-580W	HR 01.9	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1008.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
019	0000	137 B				
020	0036	0186 B	31306		2505	14532

C-REF-NO 006	YR 1963	DEPTH 44	WAVES 1 27X0	AIR T 15.4	VIS
CONS. NO 080	MONTH 9	MXSAMPD 00	WAVES 2 00X0	WET B 15.2	STN
LAT 46-350N	DAY 01	NO.DPTH 2	WND-DIR 270	WW-CODE 40	
LON 62-490W	HR 03.0	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1008.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
030	0000	141 B				
031	0040	0292 B	30938		2468	14574

C-REF-NO 006	YR 1963	DEPTH 18	WAVES 1 32X0	AIR T 14.6	VIS
CONS. NO 081	MONTH 9	MXSAMPD 00	WAVES 2 00X0	WET B 14.6	STN
LAT 46-295N	DAY 01	NO.DPTH 2	WND-DIR 320	WW-CODE 44	
LON 62-420W	HR 04.0	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1008.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
040	0000	147 B				
041	0014	1306 C	29354		2204	14943

C-REF-NO 006	YR 1963	DEPTH 37	WAVES 1 28X0	AIR T 14.0	VIS
CONS. NO 082	MONTH 9	MXSAMPD 00	WAVES 2 00X0	WET B 13.9	STN
LAT 46-333N	DAY 01	NO.DPTH 2	WND-DIR 280	WW-CODE 44	
LON 62-410W	HR 05.0	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1008.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
050	0000	137 B				
052	0033	0312 D	30918		2465	14581

C-REF-NO 006	YR 1963	DEPTH 40	WAVES 1 28X0	AIR T 14.0	VIS
CONS. NO 083	MONTH 9	MXSAMPD 00	WAVES 2 00X0	WET B 14.0	STN
LAT 46-405N	DAY 01	NO.DPTH 2	WND-DIR 280	WW-CODE 44	
LON 62-388W	HR 06.0	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARQ 1007.5	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
060	0000	137 B				
062	0036	0158 B	31224		2500	14518

C-REF-NO 006	YR 1963	DEPTH 55	WAVES 1 00X0	AIR T 14.0	VIS
CONS. NO 084	MONTH 9	MXSAMPC 01	WAVES 2 00X0	WET B 14.0	STN
LAT 46-480N	DAY 01	NO.DPTH 2	WND-DIR 230	WW-CODE 44	
LON 62-370W	HR 07.8	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1007.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
078	0000	133 B				
079	0051	0044	31375		2519	14471

*WAVES NOT COMPATIBLE WITH WIND

C-REF-NO 006	YR 1963	DEPTH	60	WAVES 1 17X0	AIR T 15.0	VIS
CONS. NO 085	MONTH 9	MXSAMPD	01	WAVES 2 00X0	WET B	STN
LAT 46-532N	DAY 01	NO.DPTH	2	WND-DIR 170	WW-CODE 44	
LON 62-355W	HR 09.0	W-COLOR		WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1007.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
090	0000	133 B				
092	0056	C098	31331		2512	14496

C-REF-NO 006	YR 1963	DEPTH	64	WAVES 1 00X0	AIR T 13.5	VIS
CONS. NO 086	MONTH 9	MXSAMPD	01	WAVES 2 00X0	WET B	STN
LAT 46-495N	DAY 01	NO.DPTH	2	WND-DIR 990	WW-CODE 44	
LON 62-250W	HR 10.0	W-COLOR		WND-SPD 01	CLD-TPE X	
MARSD SQ 151	C/I 1801	W-TRNSP		BARO 1007.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
100	0000	131 B				
101	0060	-001C	31497		2531	14450

*WAVES NOT COMPATIBLE WITH WIND

C-REF-NO 006	YR 1963	DEPTH 2694	WAVES 1 28X1	AIR T 18.2	VIS
CONS. NO 087	MONTH 9	MXSAMPD 05	WAVES 2 28X4	WET B 16.5	STN 088
LAT 42-330N	DAY 02	NO.DPTH 13	WND-DIR 280	WW-CODE 02	
LON 61-235W	HR 19.3	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1024.0	CLD-AMT 0	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
193	0000	183 B	32654		2343	15146
193	0010	1817	32668		2347	15144
193	0020	1536 B	33405		2468	15069
193	0030	1258 B	33709		2550	14983
193	0049	1544	35732		2646	15105
193	0074	1316	35406		2669	15031
193	0098	1352	35620		2678	15050
193	0147	1279	35572		2690	15033
193	0190	1176	35463		2701	15003
193	0239	0994	35245		2717	14944
193	0286	0848	35127		2732	14896
193	0378	0641	34965		2749	14829
193	0478	0476 B	34874		2762	14777

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1830 B	32654		2343	15146	0000	00000	4467
0010	1817	32668		2347	15144	0045	00002	4429
0020	1536 B	33405		2468	15069	0083	00008	3272
0030	1258 B	33709		2550	14983	0112	00015	2502
0050	1539 C	3575 H		2648	15103	0153	00031	1578
0075	1315	3541 B		2670	15031	0191	00055	1374
0100	1351	3563 B		2679	15050	0224	00085	1295
0125	1327 C	3564 H		2685	15046	0256	00121	1244
0150	1273	35567		2690	15031	0287	00165	1199
0175	1217	35509		2697	15016	0317	00214	1142
0200	1140 B	3542 B		2705	14992	0344	00268	1074
0225	1048 B	3531 B		2713	14962	0371	00324	0999
0250	0957	35212		2721	14932	0395	00383	0922
0300	0811	35097		2735	14884	0438	00504	0789
0400	0591 C	34935		2753	14812	0509	00755	0617

C-REF-NO 006	YR 1963	DEPTH 1079	WAVES 1 49X1	AIR T 17.8	VIS
CONS. NO 088	MONTH 9	MXSAMPD 05	WAVES 2 49XX	WET B 16.2	STN 089
LAT 42-502N	DAY 02	NO.DPTH 13	WND-DIR 990	WW-CODE 02	
LON 61-436W	HR 22.0	W-COLOR	WND-SPD	CLD-TPE	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO	CLD-AMT 0	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0000	175 B	31926		2306	15114
220	0010	1660 B	31866		2323	15087
220	0020	1320 B	32247		2425	14984
220	0030	0766 C	32702		2554	14791
220	0050	0420 C	33003		2620	14658
220	0075	0272	33403		2666	14605
220	0100	0384 B	33908		2696	14664
220	0150	0656	34674		2724	14793
220	0200	0694	34853		2733	14819
220	0250	0552	34716		2741	14769
220	0299	0582	34913		2753	14792
220	0399	0482	34885		2763	14767
220	0498	0420	34872		2768	14757

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1750 B	31926		2306	15114	0000	00000	4813
0010	1660 B	31866		2323	15087	0048	00002	4660
0020	1320 B	32247		2425	14984	0089	00009	3690
0030	0766 C	32702		2554	14791	0120	00016	2456
0050	0420 C	33003		2620	14658	0163	00033	1828
0075	0272	33403		2666	14605	0204	00058	1394
0100	0384 B	33908		2696	14664	0236	00086	1116
0125	0531 F	3435 D		2714	14735	0262	00116	0945
0150	0656	34674		2724	14793	0284	00148	0859
0175	0701	3482 D		2730	14817	0305	00183	0814
0200	0694	34853		2733	14819	0326	00222	0784
0225	0623 G	3478 I		2737	14794	0345	00264	0747
0250	0552	34716		2741	14769	0363	00309	0711
0300	0581	34914		2753	14792	0397	00402	0607
0400	0519 I	3497 I		2765	14783	0452	00600	0499
0500	0417	34868		2768	14757	0501	00825	0469

C-REF-NO 006	YR 1963	DEPTH 95	WAVES 1 22X1	AIR T 17.1	VIS
CONS. NO 089	MONTH 9	MXSAMPD 01	WAVES 2 22X4	WET B 16.3	STN 090
LAT 43-109N	DAY 03	NO.DPTH 7	WND-DIR 220	WW-CODE 02	
LON 62-065W	HR 00.9	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1024.0	CLD-AMT 0	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
009	0000	173 B	31391		2270	15101
009	0010	1562 C	31603		2325	15054
009	0020	1155	31906		2429	14923
009	0030	0638 C	32363		2545	14736
009	0050	0260	32759		2615	14586
009	0075	0258 B	33092		2642	14594
009	0090	0185 B	33237		2659	14567

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1730 B	31391		2270	15101	0000	00000	5158
0010	1562 C	31603		2325	15054	0049	00002	4642
0020	1155	31906		2429	14923	0091	00009	3644
0030	0638 C	32363		2545	14736	0122	00016	2545
0050	0260	32759		2615	14586	0166	00034	1870
0075	0258 B	33092		2642	14594	0210	00061	1618

C-REF-NO 006	YR 1963	DEPTH 73	WAVES 1 22X1	AIR T 16.8	VIS
CONS. NO 090	MONTH 9	MXSAMPD 01	WAVES 2 22X1	WET B 15.4	STN 091
LAT 43-290N	DAY 03	NO.DPTH 6	WND-DIR 220	WW-CODE 02	
LON 62-270W	HR 03.4	W-COLOR	WND-SPD 03	CLD-TPE	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1025.0	CLD-AMT 0	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
034	0000	165 B	31466		2294	15078
034	0010	1648 D	31441		2293	15078
034	0020	1576 B	31395		2306	15057
034	0030	1012 E	32313		2486	14879
034	0050	0461 B	33022		2617	14676
034	0070	0593	33718		2657	14742

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1650 B	31466		2294	15078	0000	00000	4927
0010	1648 D	31441		2293	15078	0050	00003	4944
0020	1576 B	31395		2306	15057	0099	00010	4826
0030	1012 E	32313		2486	14879	0138	00020	3107
0050	0461 B	33022		2617	14676	0188	00039	1855

C-REF-NO 006	YR 1963	DEPTH 256	WAVES 1 19X0	AIR T 17.0	VIS 8
CONS. NO 091	MONTH 9	MXSAMPD 02	WAVES 2 00X0	WET B 16.2	STN 102
LAT 43-520N	DAY 03	NO.DPTH 10	WND-DIR 190	WW-CODE 03	
LON 62-545W	HR 13.7	W-COLOR	WND-SPD 02	CLD-TPE 4	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1025.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
137	0000	156 B	31330		2304	15048
137	0010	1530 C	31317		2310	15040
137	0020	0782 B	32194		2512	14789
137	0030	0368 E	32412		2578	14625
137	0050	0330 E	32854		2617	14618
137	0075	0547	33697		2661	14724
137	0099	0720 B	34338		2689	14806
137	0149	0792	34709		2708	14847
137	0199	0766	34743		2714	14845
137	0249	0741	34745		2718	14844

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1560 B	31330		2304	15048	0000	00000	4835
0010	1530 C	31317		2310	15040	0048	00002	4785
0020	0782 B	32194		2512	14789	0087	00008	2854
0030	0368 E	32412		2578	14625	0112	00014	2223
0050	0330 E	32854		2617	14618	0153	00031	1857
0075	0547	33697		2661	14724	0195	00057	1445
0100	0724 B	34353		2690	14808	0228	00086	1180
0125	0788 F	3463 I		2702	14840	0256	00118	1066
0150	0792	34711		2708	14847	0282	00155	1018
0175	0785 B	3475 D		2712	14849	0308	00197	0983
0200	0782 F	3480 I		2716	14853	0332	00244	0951
0225	0767 C	3479 G		2718	14851	0356	00296	0936
*0250	0740	34742		2718	14844	0380	00354	0938

C-REF-NO 006	YR 1963	DEPTH 146	WAVES 1 21X0	AIR T 18.0	VIS
CONS. NO 092	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 16.0	STN 105
LAT 44-160N	DAY 03	NO.DPTH 8	WND-DIR 210	WW-CODE 02	
LON 63-194W	HR 17.8	W-COLOR	WND-SPD 02	CLD-TPE 4	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1025.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
178	0000	168 B	31298		2275	15085
178	0010	1655 B	31274		2279	15079
178	0020	1550 B	31615		2328	15052
178	0030	0450	32355		2566	14659
178	0050	0155	32443		2598	14536
178	0074	0175	32658		2614	14552
178	0099	0509 B	33450		2646	14709
178	0139	0720	34398		2694	14813

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1680 B	31298		2275	15085	0000	00000	5115
0010	1655 B	31274		2279	15079	0051	00003	5081
0020	1550 B	31615		2328	15052	0100	00010	4611
0030	0450	32355		2566	14659	0135	00018	2344
0050	0155	32443		2598	14536	0179	00036	2035
0075	0187 B	3269 B		2615	14557	0228	00067	1872
0100	0411 I	3331 I		2646	14667	0272	00106	1591
0125	0598 I	3397 I		2676	14757	0308	00148	1310

C-REF-NO 006	YR 1963	DEPTH 91	WAVES 1 21X1	AIR T 17.5	VIS
CONS. NO 093	MONTH 9	MXSAMPD 01	WAVES 2 21X1	WET B 15.0	STN 106
LAT 44-240N	DAY 03	NO.DPTH 7	WND-DIR 210	WW-CODE 02	
LON 63-279W	HR 19.0	W-COLOR	WND-SPD 03	CLD-TPE 4	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1024.0	CLD-AMT 3	HW

O B S E R V E D

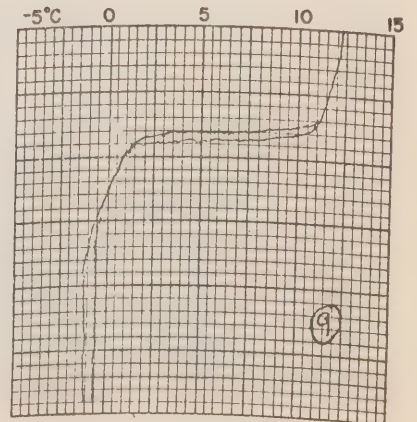
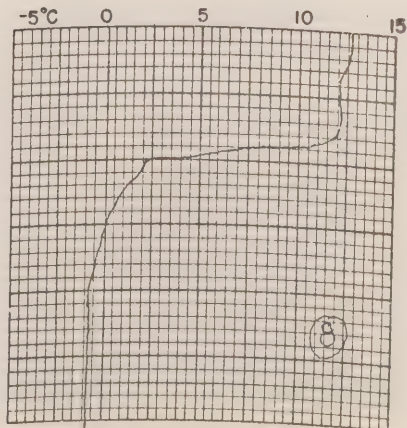
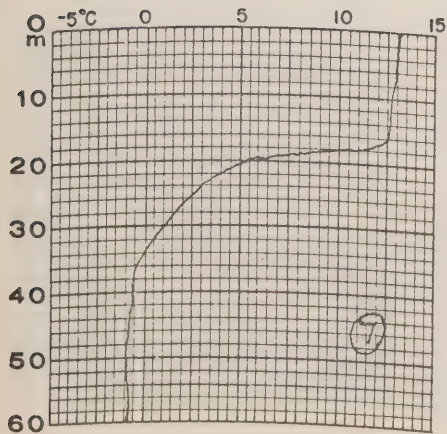
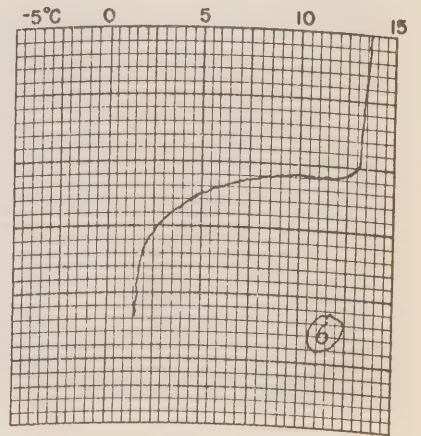
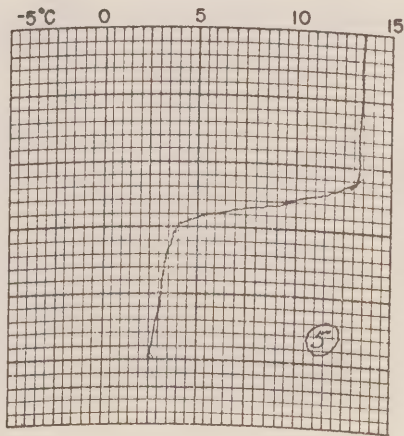
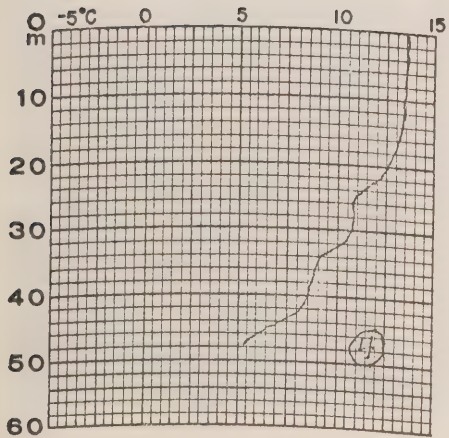
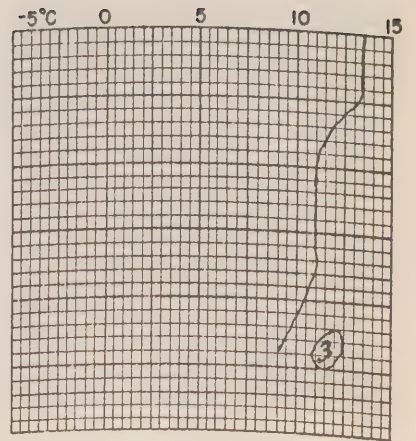
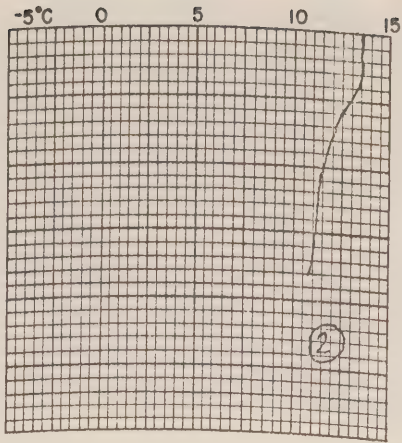
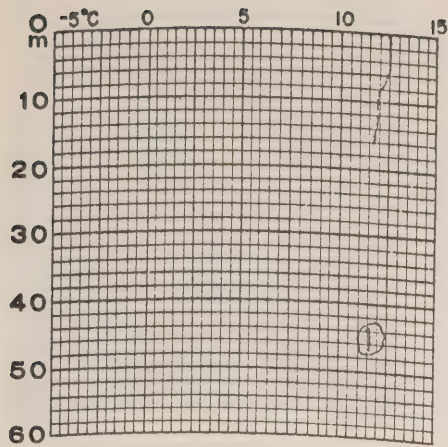
GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	157 B	30729		2256	15044
190	0010	1550	30758		2262	15040
190	0020	0476 B	31737		2514	14660
190	0030	0270	31779		2537	14574
190	0050	0177	32012		2562	14540
190	0075	0193	32298		2584	14555
190	0085	0183 B	32363		2590	14553

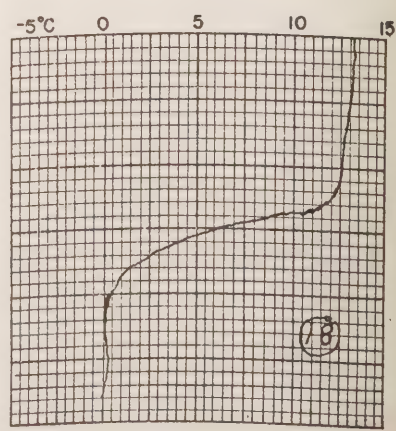
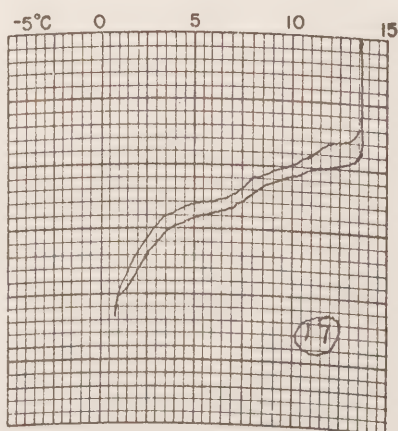
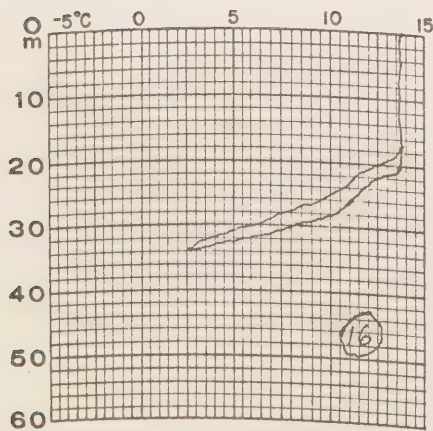
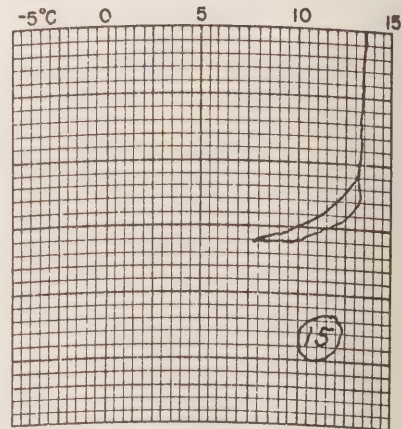
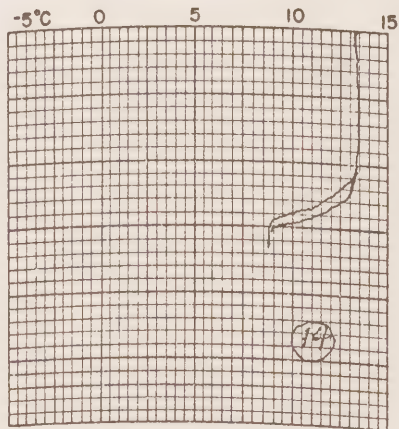
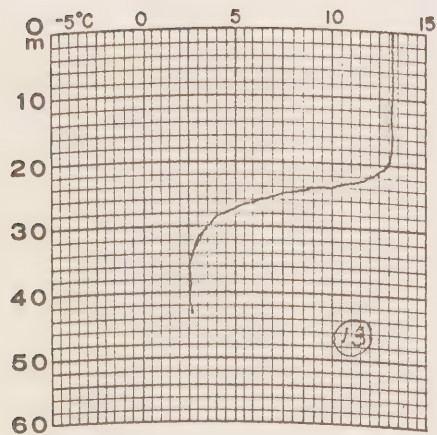
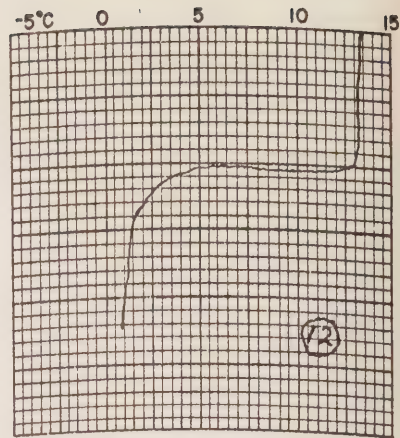
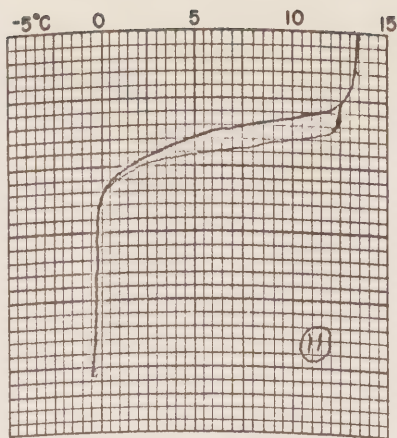
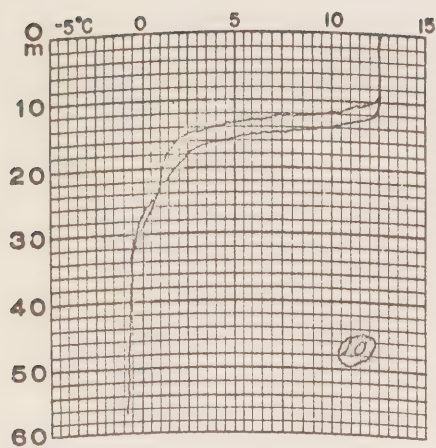
I N T E R P O L A T E D

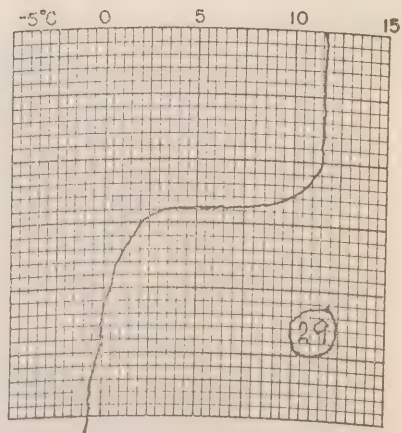
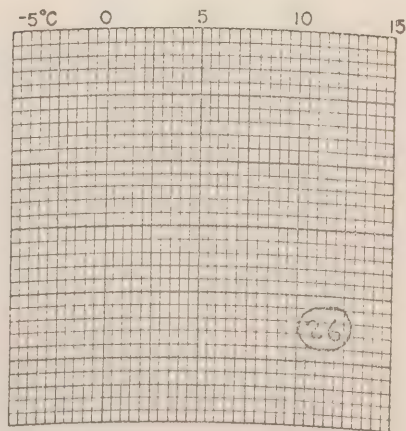
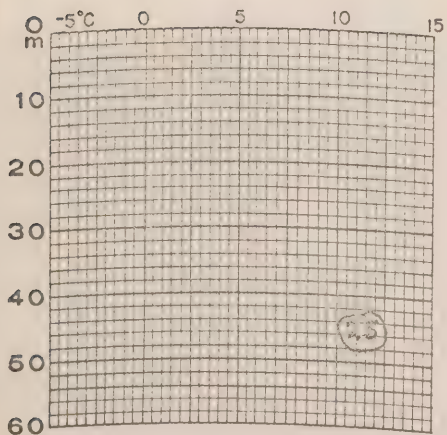
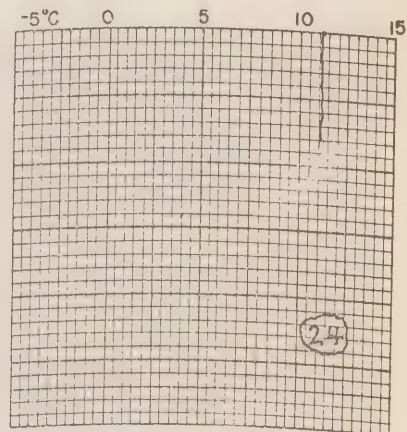
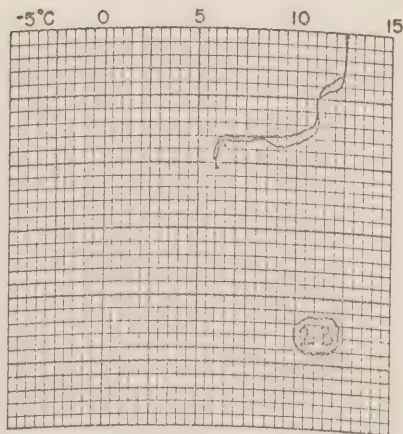
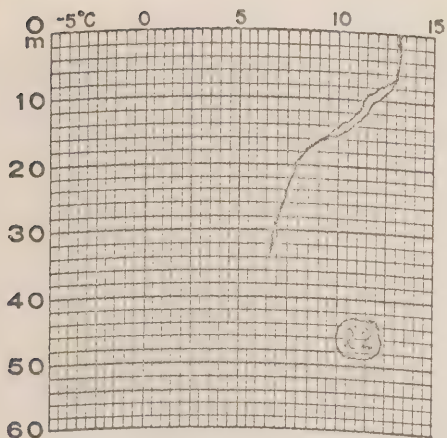
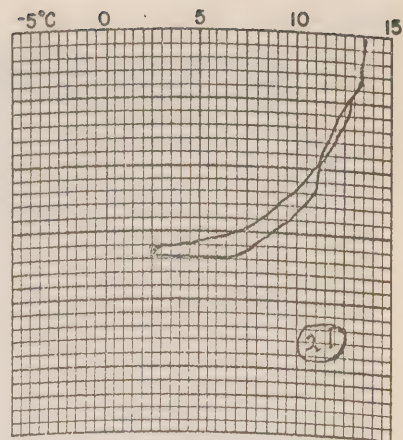
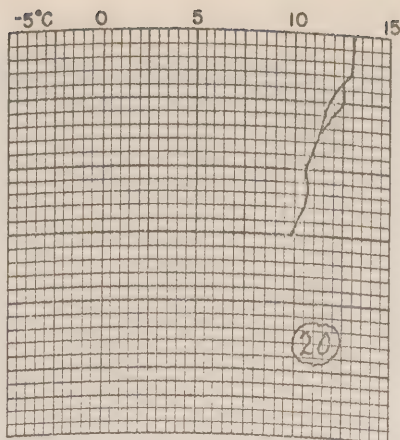
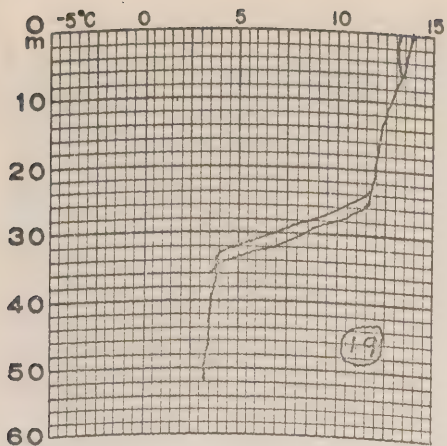
DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1570 B	30729		2256	15044	0000	00000	5296
0010	1550	30758		2262	15040	0053	00003	5236
0020	0476 B	31737		2514	14660	0093	00008	2834
0030	0270	31779		2537	14574	0121	00015	2619
0050	0177	32012		2562	14540	0171	00036	2376
0075	0193	32298		2584	14555	0228	00072	2171

SECTION IV

Bathythermograms

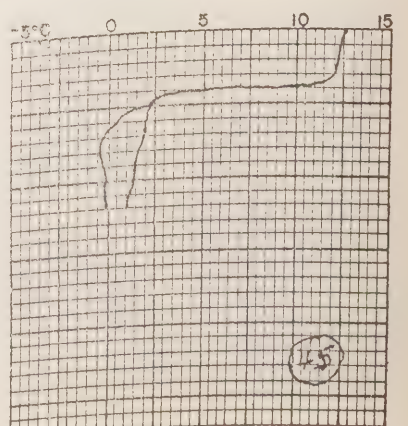
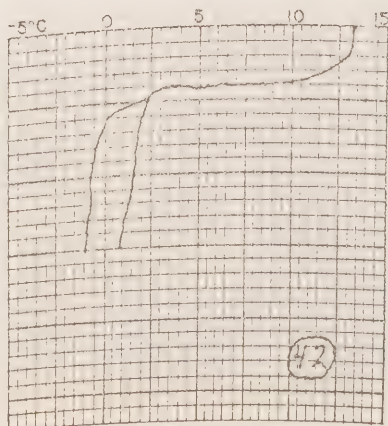
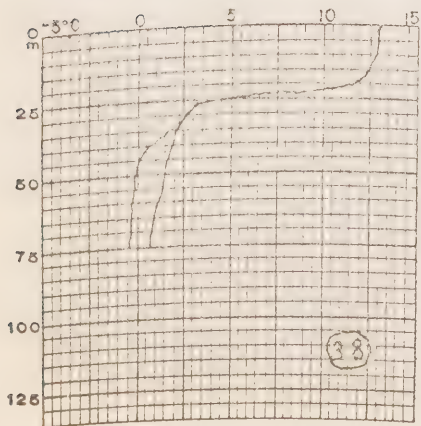
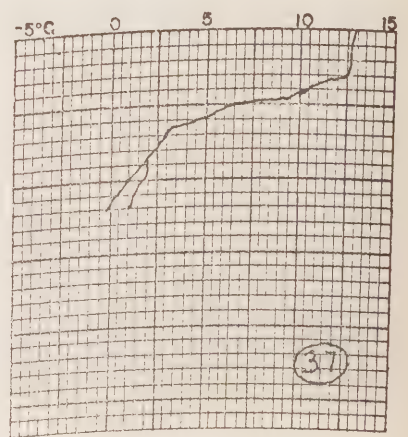
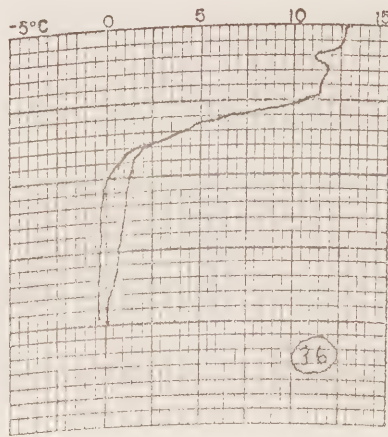
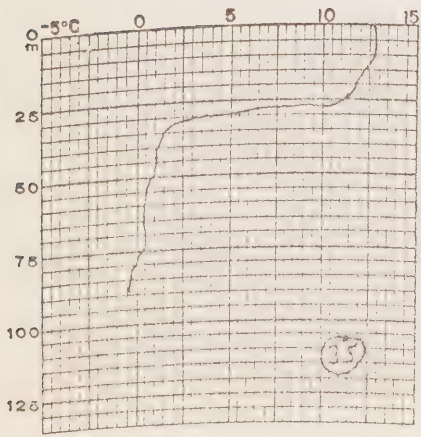
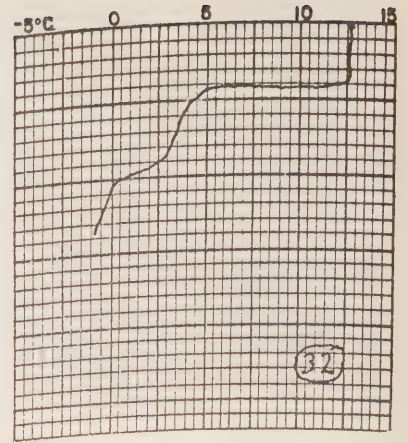
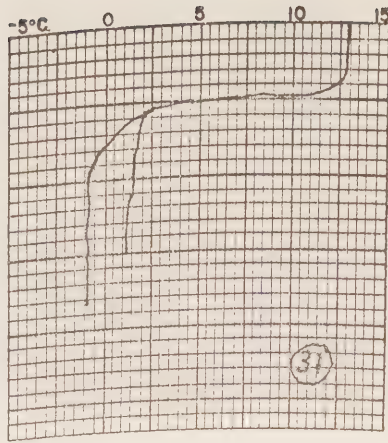
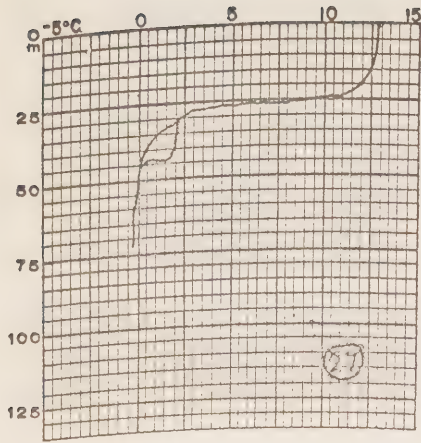


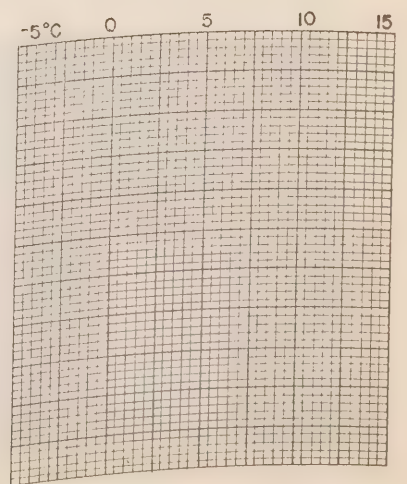
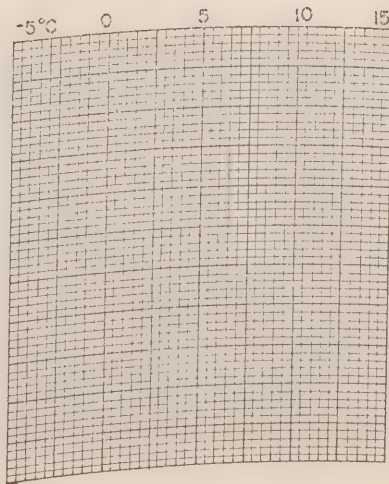
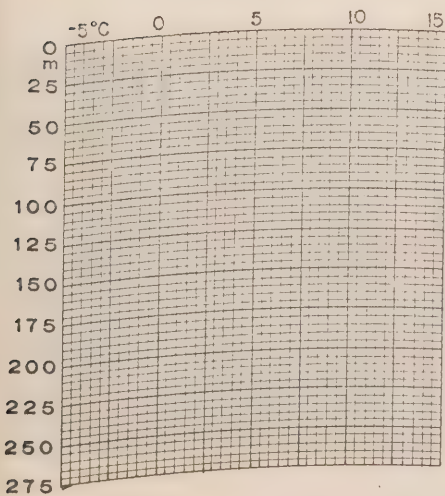
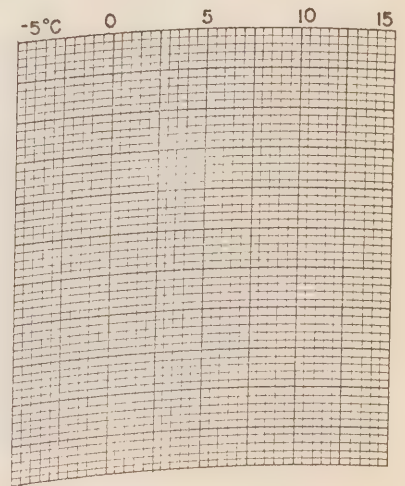
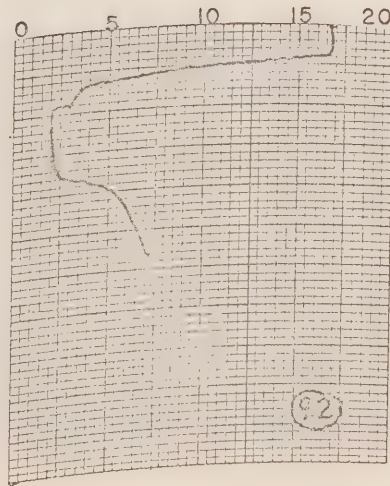
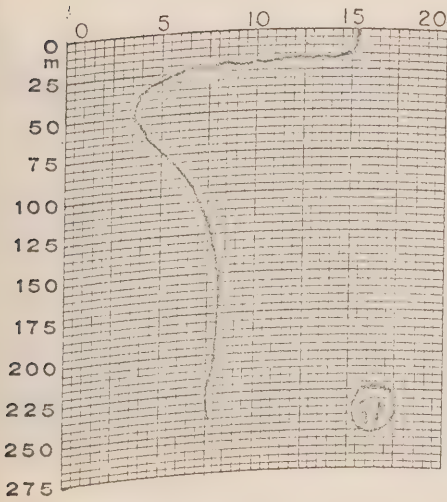
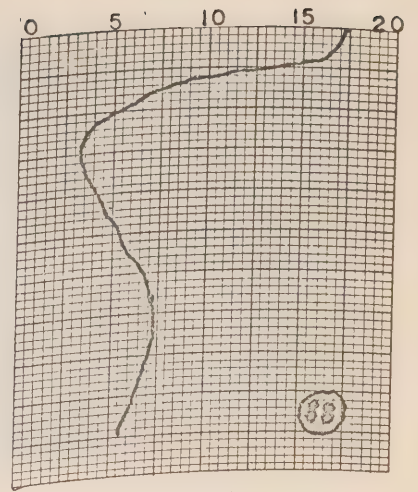
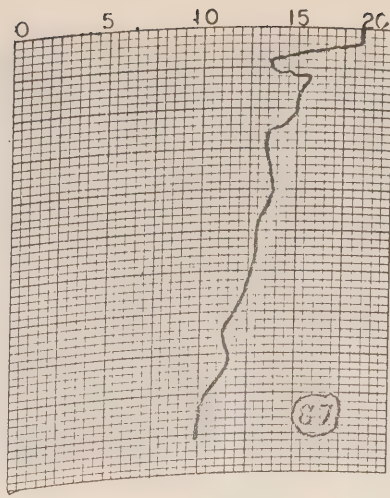
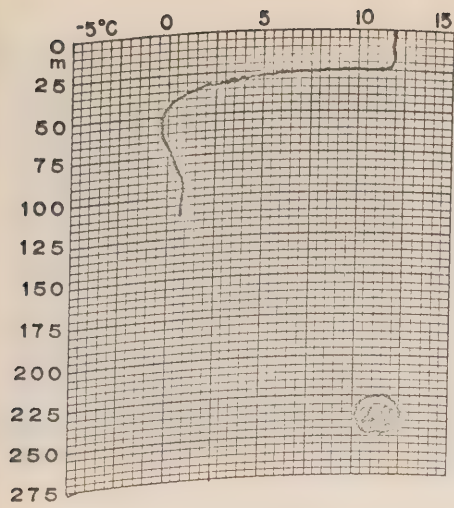


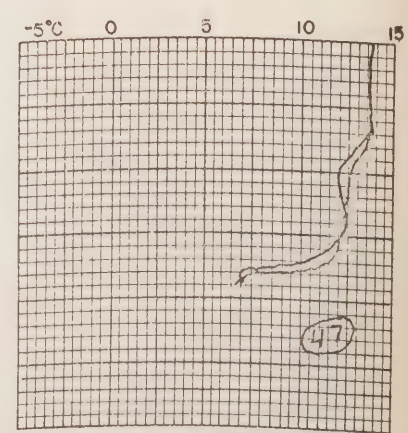
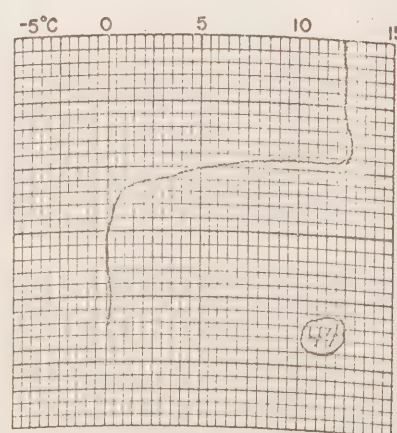
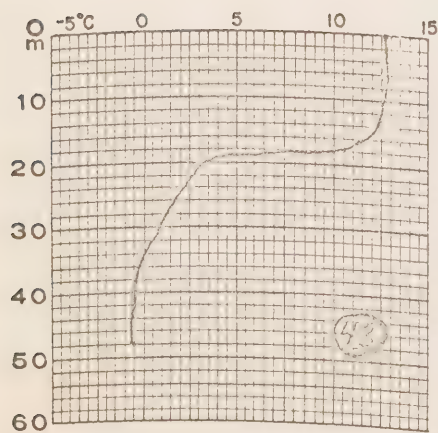
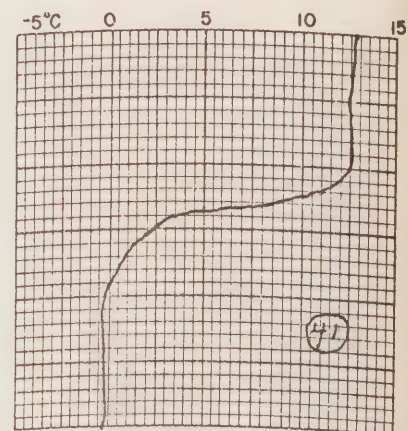
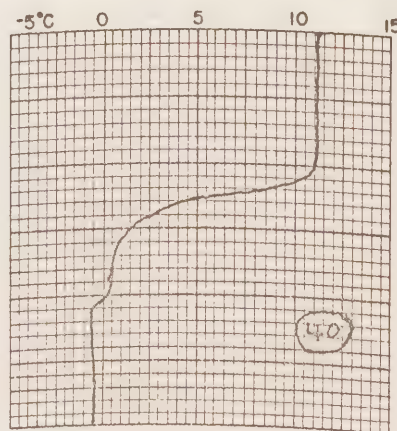
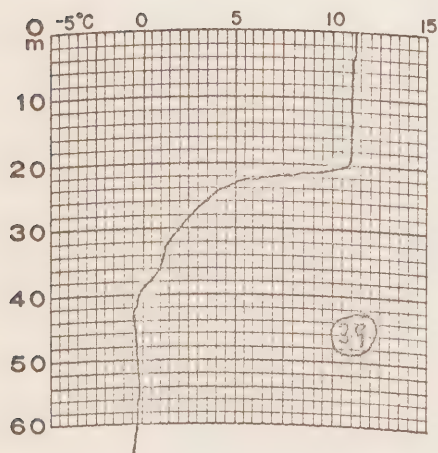
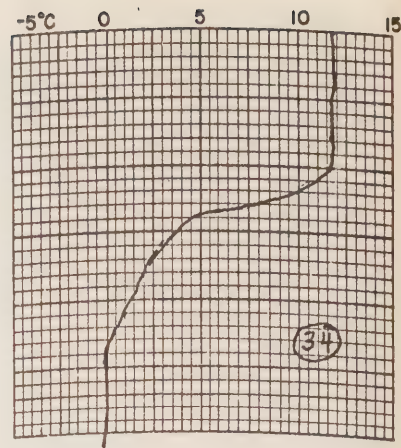
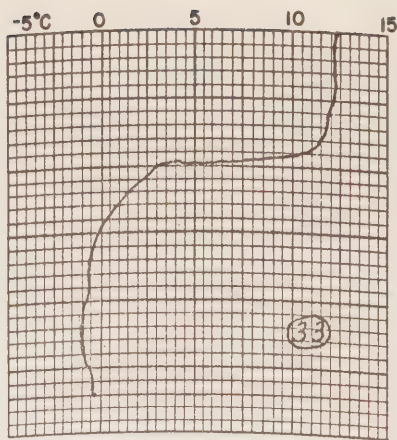
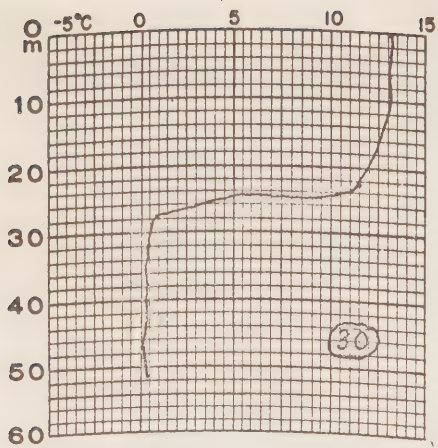


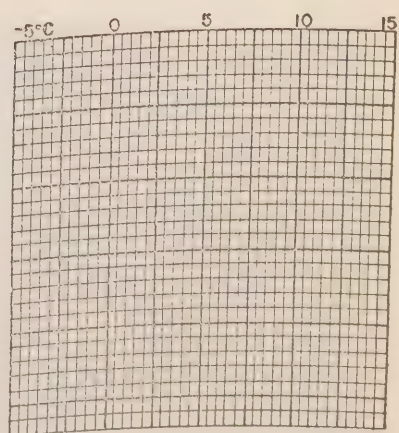
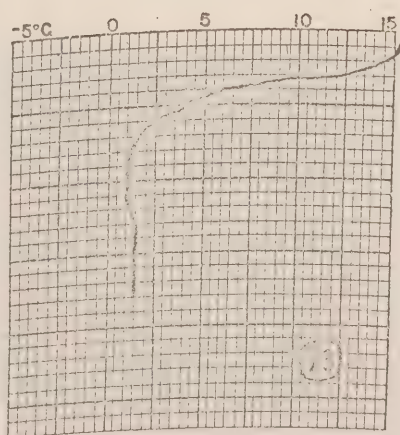
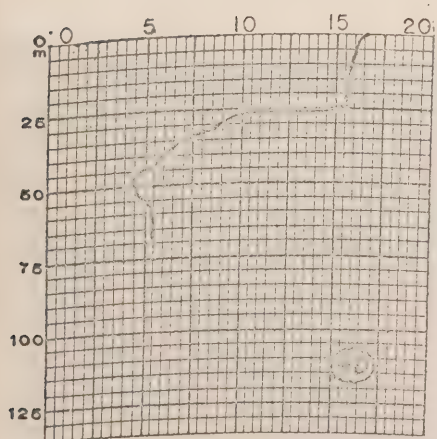
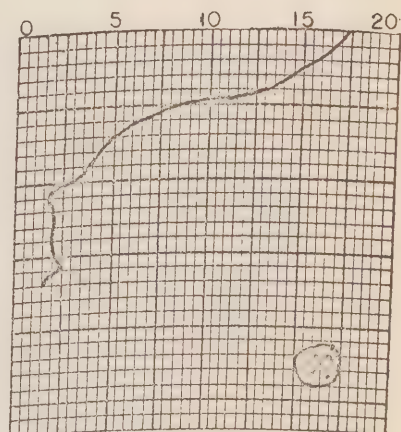
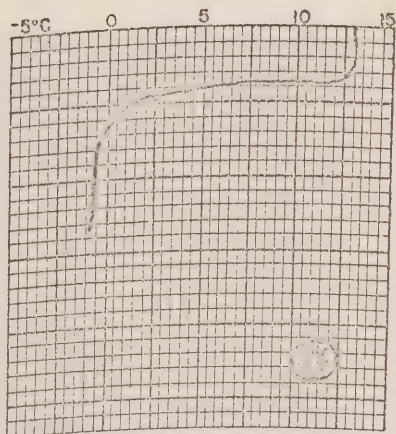
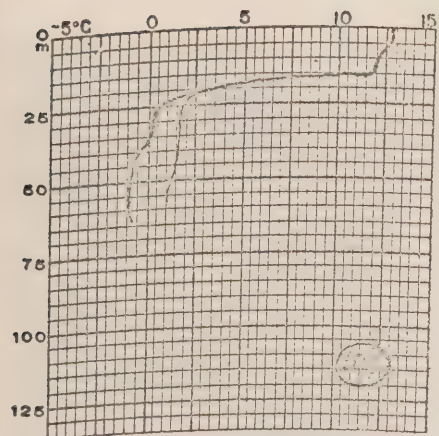
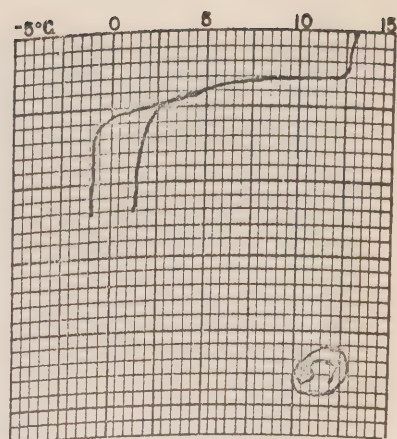
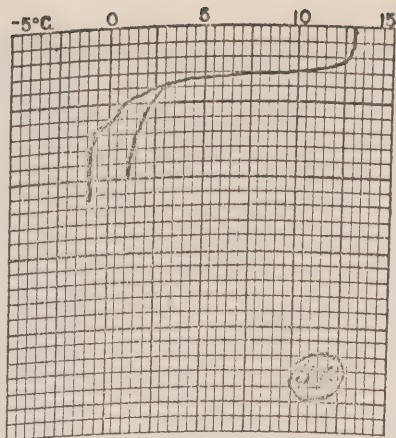
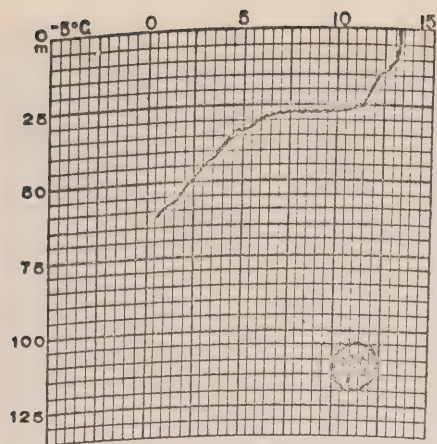
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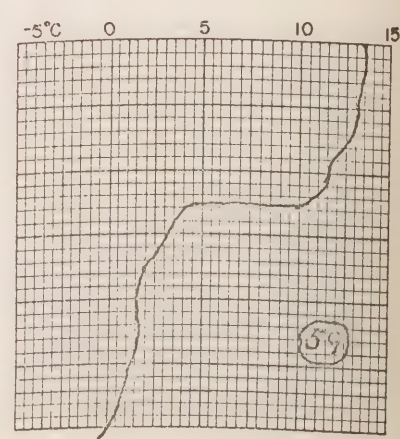
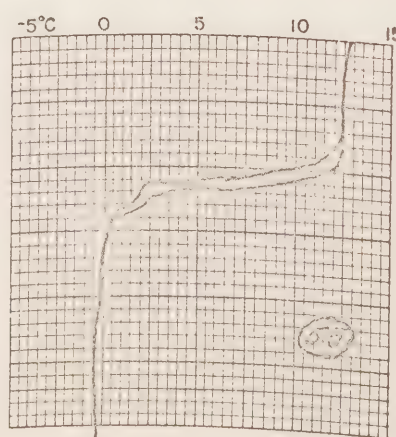
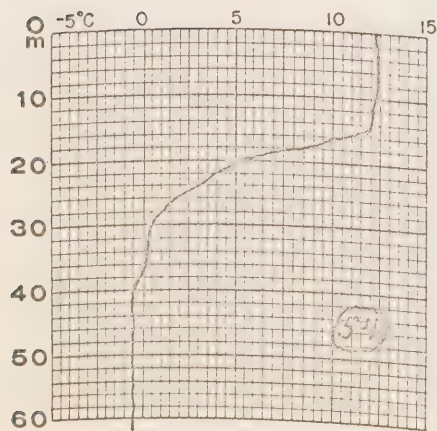
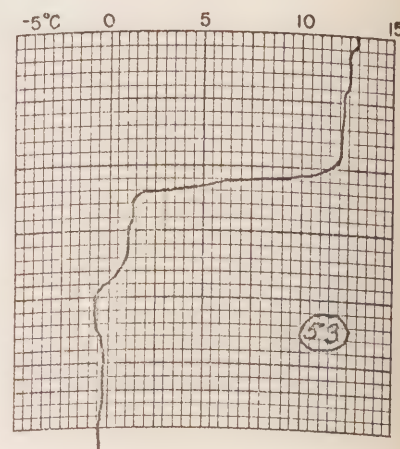
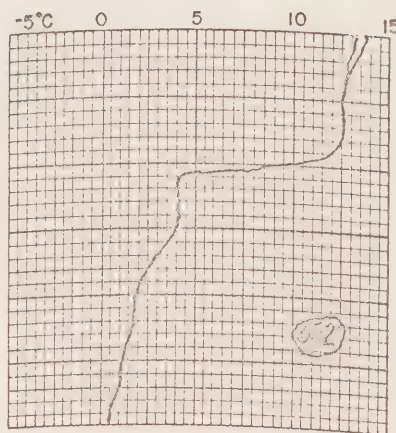
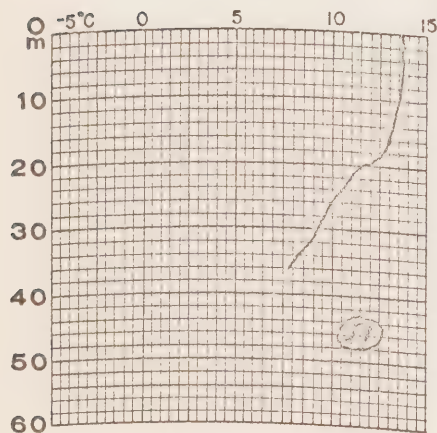
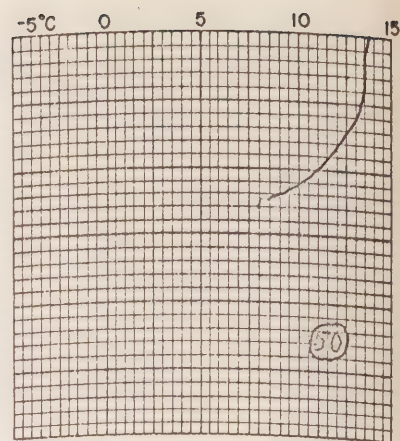
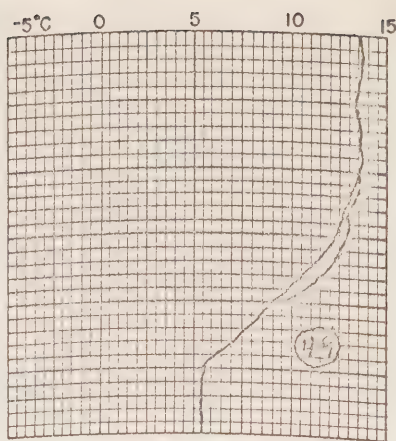
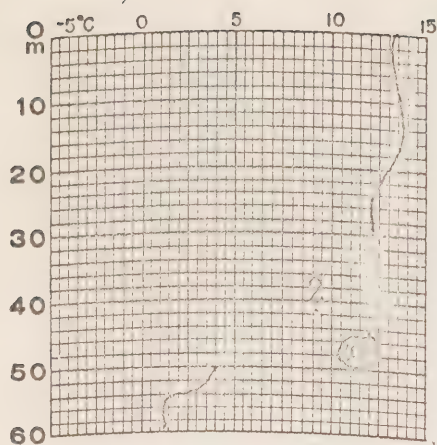
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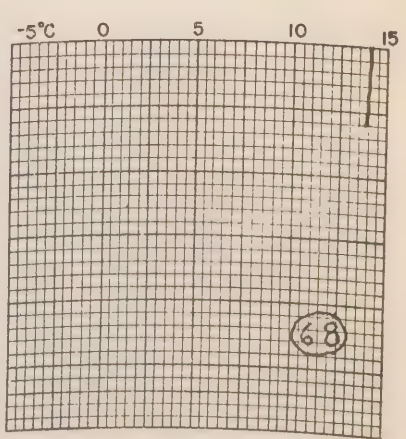
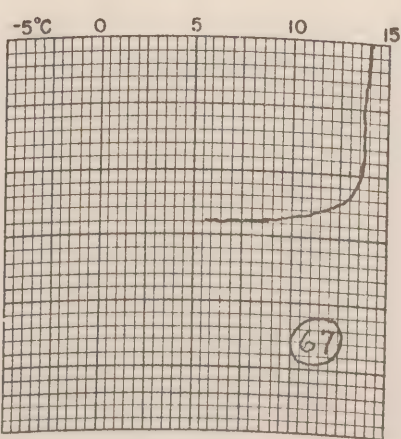
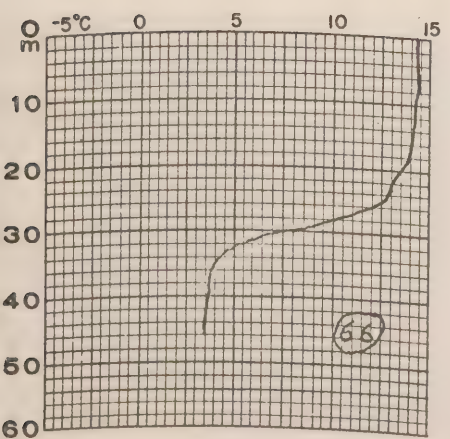
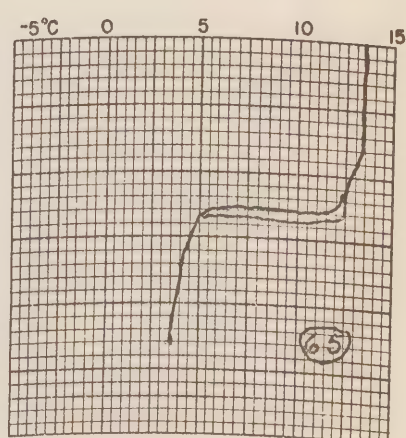
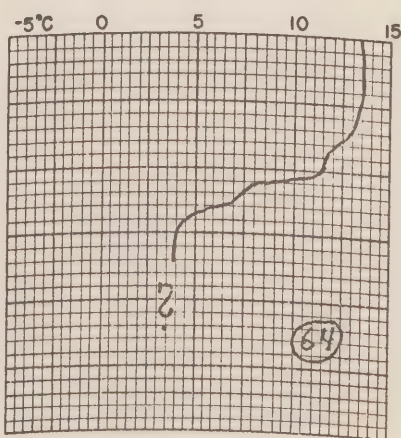
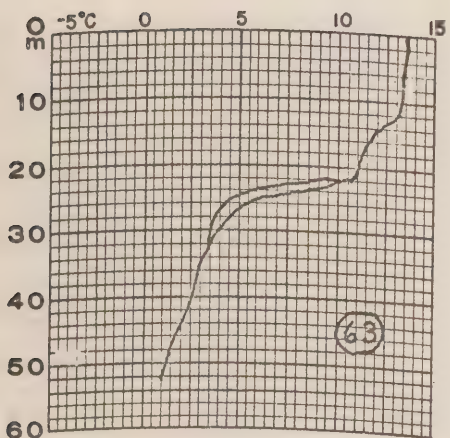
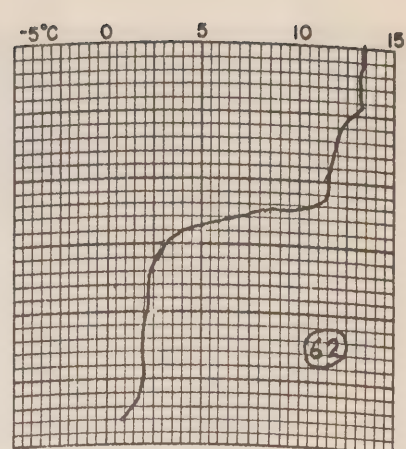
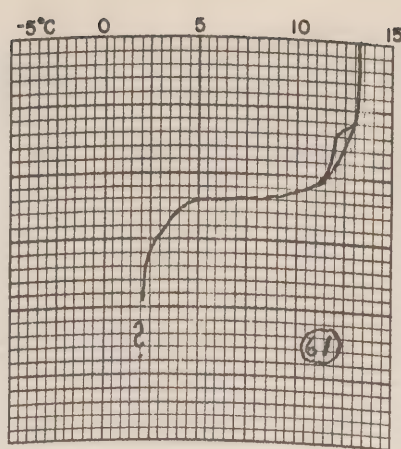
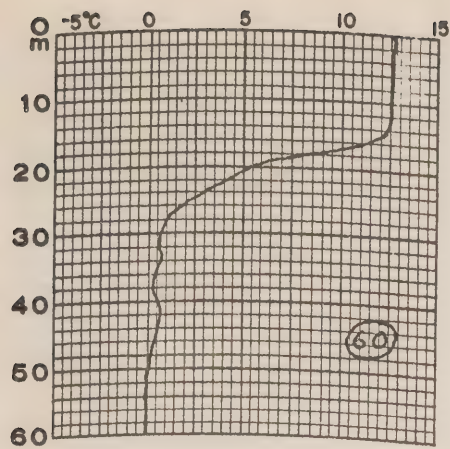


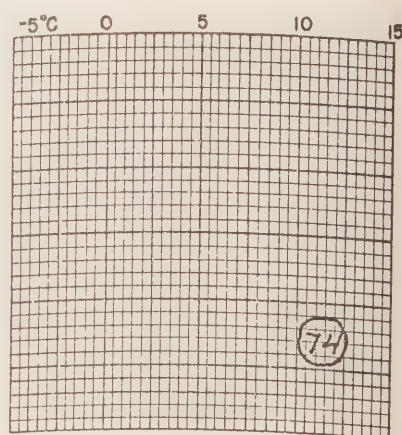
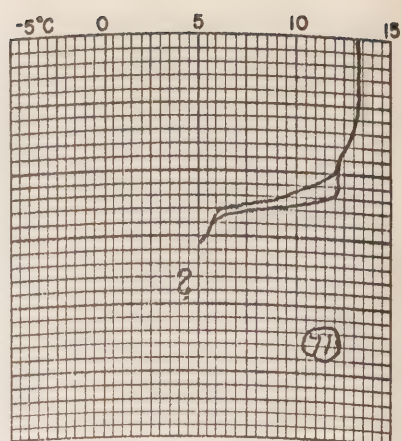




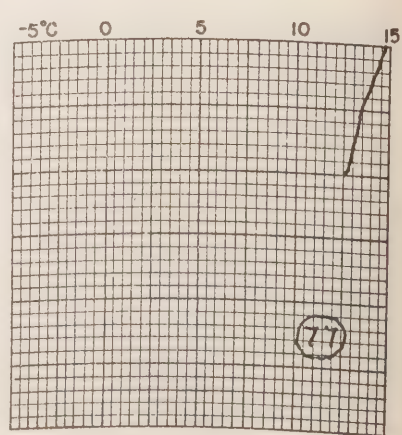


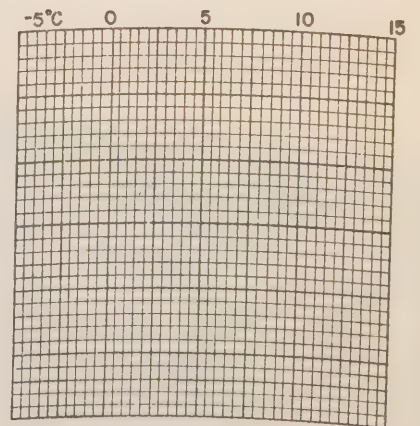
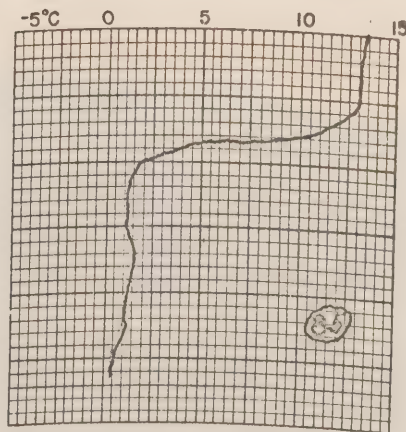
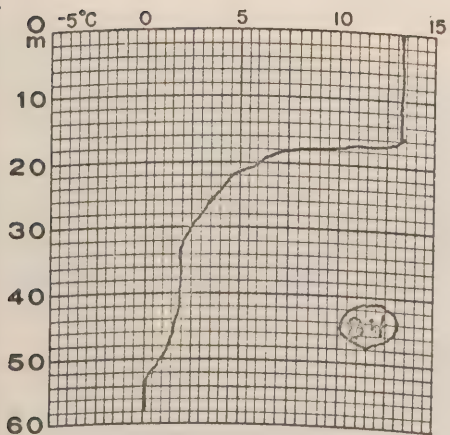
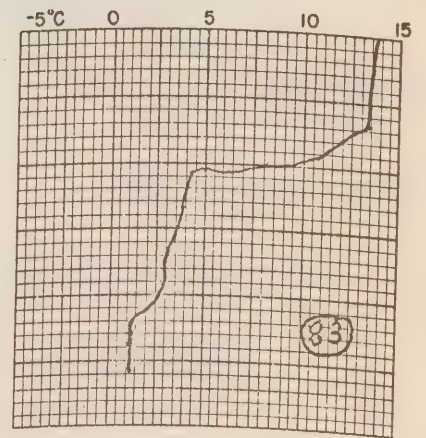
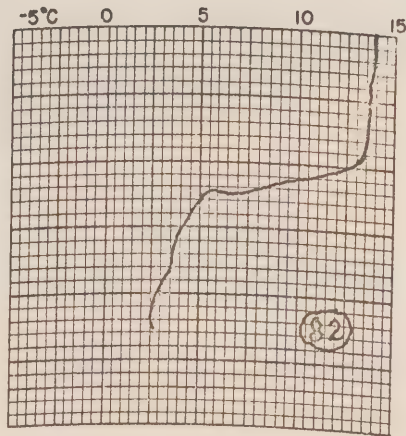
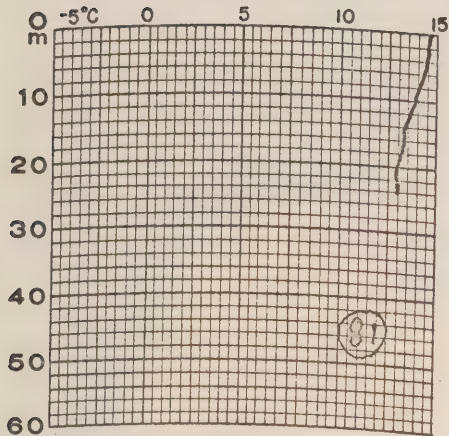
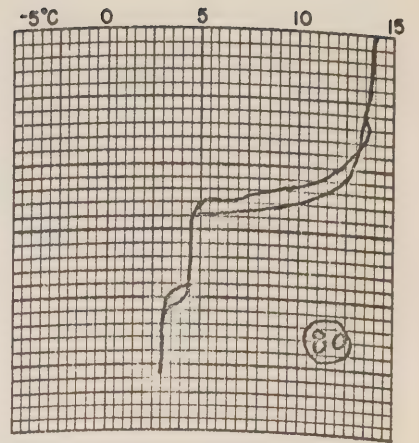
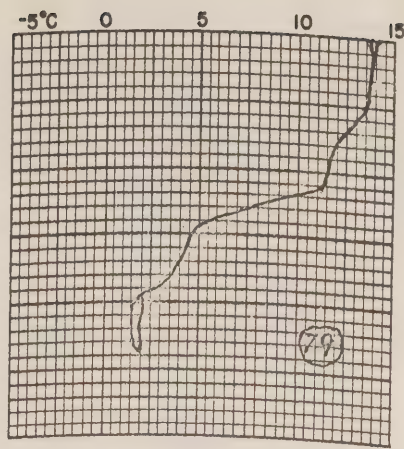
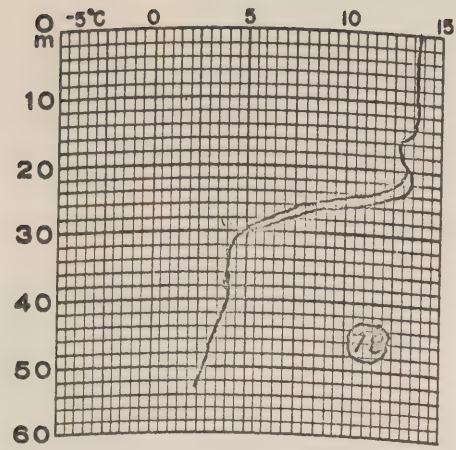






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OCEAN WEATHER STATION "P"
NORTH PACIFIC OCEAN

May 16 to August 12, 1964

No. 3

1965 Data Record Series

Canadian Oceanographic Data Centre

**Programmed by the
Canadian Committee on Oceanography**

1965

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FISHERIES RESEARCH BOARD OF CANADA

Ocean Weather Station "P" North Pacific Ocean

Ships:	CCGS "St. Catharines"	CCGS "Stonetown"
Local Cruise designations:	P-64-2	Patrol No. 61
Cruise periods:	May 16-June 28, 1964	June 27-August 12, 1964
Observer:	Mr. R. B. Tripp.	

PACIFIC OCEANOGRAPHIC GROUP - Nanaimo, B. C.

SECTION I

Description of data collection procedures



Figure 1.

The Canadian Weather Ship C.C.G.S. " St. Catharines ".

(D.O.T. Photo)

The oceanographic winch is located on the starboard side of the signal deck, just aft of the bridge wing.



Figure 2.

The Canadian Weather Ship C.C.G.S. "Stonetown".

(D.O.T. Photo)

Bathythermograph soundings boom can be seen below the bridge on the signal deck.

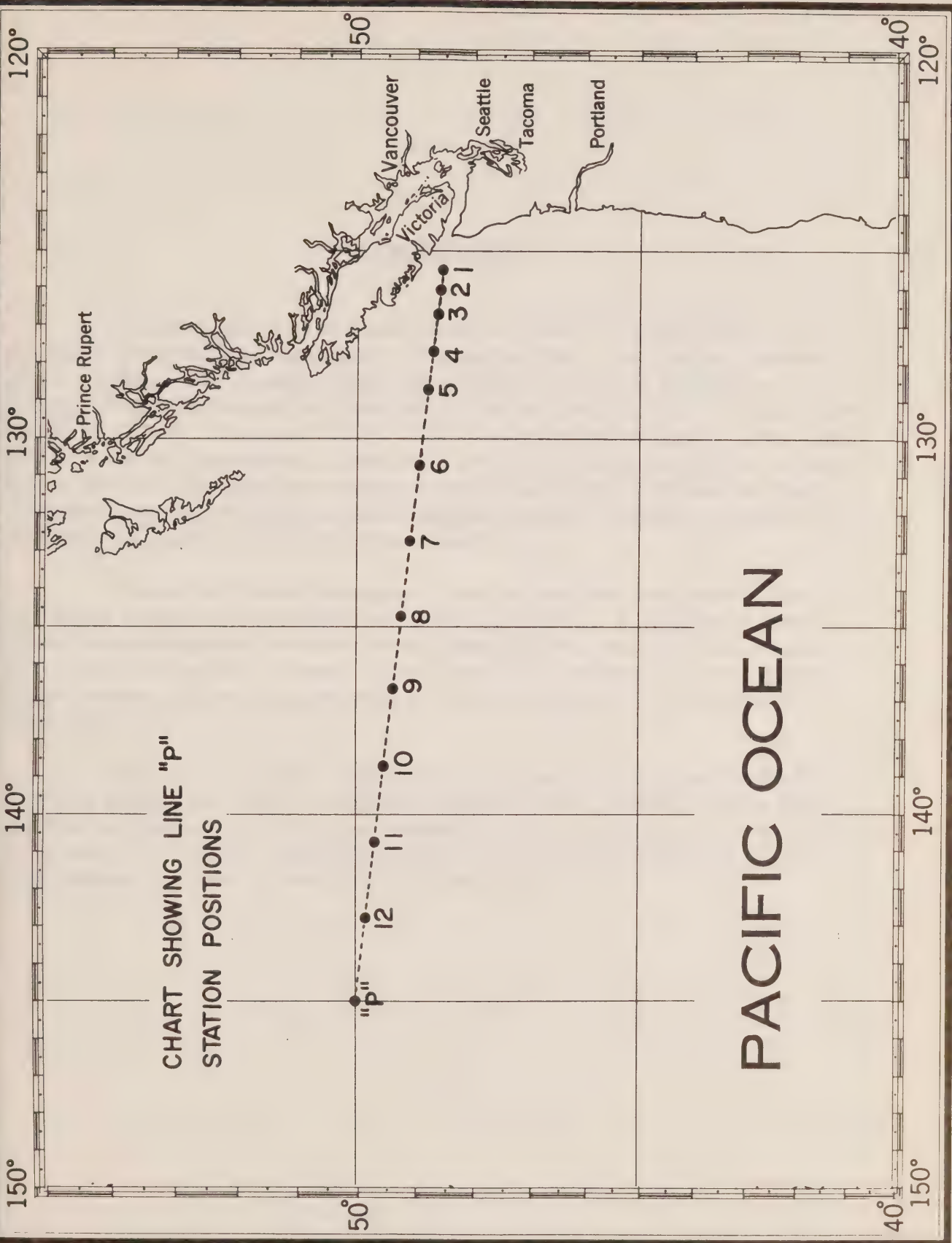


CHART SHOWING LINE "p"
STATION POSITIONS

PACIFIC OCEAN

INTRODUCTION

Canadian operation of Ocean Weather Station "P" (latitude $50^{\circ}00'N$, longitude $145^{\circ}00'W$) was inaugurated in December 1950. The Station is manned by two vessels of the Canadian naval frigate class operated by the Marine Services of the Department of Transport. They are the C.C.G.S. "St. Catharines" and the C.C.G.S. "Stonetown" (Fig. 1 and 2) (Atlantic Oceanographic Group, MS, 1961). Each ship remains on Station for a period of 6 weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch. The chief purpose of the Station is to operate as a meteorological station for surface and upper-air observations, and as an air-sea rescue station.

Twice-daily bathythermograph observations have been made at Station "P" by the Pacific Oceanographic Group since July 1952. A program of more extensive oceanographic observations at Station "P" was commenced in August 1956. This was further extended in April 1959 by the addition of a series of ten oceanographic stations along the route to and from Station "P" and Swiftsure Bank (Fig. 3).

The C.C.G.S. "St. Catharines" is equipped with deck and laboratory facilities required to make oceanographic observations. Oceanographers from the Pacific Oceanographic Group accompany the ship on each patrol. The C.C.G.S. "Stonetown" is equipped with bathythermograph sounding equipment only. BT observations are made by members of the ship's crew.

CRUISE LOG, C.C.G.S. "ST. CATHARINES", SURVEY P-64-2

- May 15: ship departed Esquimalt, B.C. for Ocean Weather Station "P"; 9 oceanographic stations observed along Line "P", en route from Swiftsure Bank to Station "P".
- May 18: rendezvous with C.C.G.S. "Stonetown", and commenced normal Station oceanographic routine.
- May 27: University of Washington research vessel M.V. "Brown Bear" observed an oceanographic station at a position 1 cable distant from "St. Catharines".
- (Station Consec. No. 012).
- June 28: relieved by C.C.G.S. "Stonetown", and proceeded on return trip. No oceanographic stations or BT observations were made because of need for full speed.
- July 1: berthed at Esquimalt, B.C.

Fourteen oceanographic stations were observed at Ocean Station "P" - 8 to 400 m, 3 to 2000 m, and 3 to 4200 m. Dissolved oxygen determinations were made on all water samples collected on Station, but not on those from the stations observed in Line "P". BT casts to 275 m depth were made at each 40' of longitude in Line "P", at each oceanographic station and at 1700 G.M.T. daily on Station. A BT cast to 135 m depth was also made at 0200 G.M.T. daily on Station. A surface salinity sample was collected at the 0200 BT cast.

Vertical plankton hauls from 150 m were made on 21 days at Station "P", and 2 hauls were made from 1200 m depth. Surface horizontal tows of 10 minutes duration were made on 3 successive evenings at the beginning, middle and end of the patrol. Ocean productivity measurements of photosynthesis (C_{14} method) and of plant pigment concentrations were made on 40 samples collected at the surface and at depths to 200 m.

BT casts to 135 m for OCEAN series information (Giovando, MS, 1962) were made on 17 days at Station "P".

CRUISE LOG, C.C.G.S. "STONETOWN", PATROL NO. 61

- June 26: departed Esquimalt, B.C. for Ocean Station "P"; 3 OCEAN series observed en route, but no regular BT observations were made.
- June 28: rendezvous with C.C.G.S. "St. Catharines".
- June 30: regular twice-daily BT observations commenced.
- August 10: relieved by C.C.G.S. "St. Catharines"; proceeded on return journey; 2 OCEAN series observed en route, but no regular BT observations were made.
- August 13: secured at Esquimalt, B.C. berth.

Twice-daily BT observations were made during 42 days on Station; to 110 m at 0200 G.M.T. and to 215 m at 1700 G.M.T. Surface salinity samples were collected at the 0200 cast. OCEAN series observations were made during 18 days on Station.

OBSERVATION PROCEDURES

1. Samples at depth were obtained with Nansen reversing water samplers. Shallow stations to 400 m were observed in one cast. Stations to 2000 m were observed in 2 casts - the first to 400 m, and the second from 500 m. Stations to 4200 m were observed in 2 casts - the first to 600 m; the second from 800 m.
2. Temperatures at depth were measured by German or Japanese protected reversing thermometers. Two thermometers were used at all sampling depths except 20, 50, 100, 150 and 200 m, where only one thermometer was used. Unprotected reversing thermometers were used on all the samplers from 250 m to the deepest observed depth.
3. Surface samples for salinity and dissolved oxygen determinations were obtained in a one-gallon plastic bucket. The surface temperature was measured in this sample with an armoured thermometer graduated in 0.5 C° intervals.
4. Water transparency observations were made with a white secchi disc of 30 cm diameter.
5. Station locations were determined by the officer of the watch, who also made the meteorological observations reported with the oceanographic data.

LABORATORY PROCEDURES

The salinity determinations of the oceanographic station samples and the 0200 surface samples collected during Survey P-64-2 were made with an inductive salinometer, Model 601 MK III, manufactured by Auto-Lab Industries Pty. Ltd., Sydney, Australia (Brown and Hamon, 1961). The samples were analysed on board ship. The salinity data are the means of duplicate determinations whose "conductivity ratio" values fell within an acceptable range. The accuracy of the determinations at the 35 ‰ salinity level is stated to be ± 0.003 ‰ (Brown and Hamon, 1961). The 0200 surface samples collected during the "Stonetown" Patrol No. 61 were analysed in the shore laboratory using the MK III conductivity salinometer (Strickland, MS, 1958).

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Strickland and Parsons, 1960).

The ocean productivity measurements were made according to the methods described by Strickland (1960). Results will be reported later in a publication of the Fisheries Research Board.

BATHYTHERMOGRAPH DATA

The BT traces have been drawn on standard pre-printed graphs resembling BT calibration grids of several depth ranges. The slides were positioned on the appropriate calibration grid in an adjustable holder. The BT traces were aligned on the grid using a temperature value obtained from a thermograph recording of the engine-room intake temperature. The top of the trace was always aligned with the zero-depth grid line.

The bathythermograms are arranged in a chronological order in 3 sections for each ship; the first section presenting the 135 m casts, the second the 275 m casts, and the third the OCEAN series casts. The date-time (G.M.T.) and position information are listed below each bathythermogram. BT observations made at an oceanographic station are identified by an asterisk (*) preceding the date-time group. Only one of the 8 slides in each OCEAN group is reproduced as a bathythermogram. This trace is considered to be representative of the group. The date-time information is that of the particular slide, but the position co-ordinates are those of the last slide in the group.

SURFACE SALINITY DATA

These are presented in a table listing the date-time, position, and salinity values. The data for the C.C.G.S. "St. Catharines" Survey P-64-2 are considered to have an accuracy of $\pm 0.003\text{‰}$ (Brown and Hamon, 1961). The C.C.G.S. "Stonetown" Patrol No. 61 data are from duplicate determinations, and have an accuracy range of $\pm 0.004\text{‰}$ at the 0.05 probability level.

PERSONNEL

The oceanographer on board C.C.G.S. "St. Catharines" during Survey P-64-2 was Mr. R.B. Tripp. Assisting in the preparation of the data for computation and presentation in the data record were: Messrs. D. G. Robertson, H.J. Hollister, R.B. Tripp, and B.R. Olund. The officers and crew of the two ships took the regular twice-daily BT casts, and assisted in the oceanographic observations.

SECTION II

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "**estimate of precision**" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "**interpolation error estimate**" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "**measurement error estimate**" comprises the "**combined measurement and interpolation error estimate**". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

1 IDENT. CODE		2 LATITUDE (N=+)		3 LONGITUDE (W=+)		5 DATE		7 DEPTH		8 NO. DEPTHS OBS'D.		VESSEL	
COUNTRY INST.		DEG. MIN. 1/10		DEG. MIN. 1/10		YEAR MONTH DAY		HOURS 1/10 TO BOTTOM				ENTERED BY	
1 8						19 20 21 22 23 24 25 26 27 28 29 30 31							
1		2		3		4		5		6		7	
WATER		WAVES I		WAVES II		WIND		BAROMETER		AIR TEMP.		WET BULB	
COLOUR TRANS.		Dw Dp Pw Hw		Dw Dp Pw Hw		DIR. SPEED		10		10		10 (SEPT. 62)	
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28		29		30		31		32		33		34	
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49		50		51		52		53		54		55	
56		57		58		59		60		61		62	
63		64		65		66		67		68		69	
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308		309		310		311		312		313		314	
315		316		317		318		319		320		321	
322		323		324		325		326		327		328	
329		330		331		332		333		334		335	
336		337		338		339		340		341		342	
343		344		345		346		347		348		349	
350		351		352		353		354		355		356	
357		358		359		360		361		362		363	
364		365		366		367		368		369		370	
371		372		373		374		375		376		377	
378		379		380		381		382		383		384	
385		386		387		388		389		390		391	
392		393		394		395		396		397		398	
399		400		401		402		403		404		405	
406		407		408		409		410		411		412	
413		414		415		416		417		418		419	
420		421		422		423		424		425		426	
427		428		429		430		431		432		433	
434		435		436		437		438		439		440	
441		442		443		444		445		446		447	
448		449		450		451		452		453		454	
455		456		457		458		459		460		461	
462		463		464		465		466		467		468	
469		470		471		472		473		474		475	
476		477		478		479		480		481		482	
483		484		485		486		487		488		489	
490		491		492		493		494		495		496	
497		498		499		500		501		502		503	
504		505		506		507		508		509		510	
511		512		513		514		515		516		517	
518		519		520		521		522		523		524	
525		526		527		528		529		530		531	
532		533		534		535		536		537		538	
539		540		541		542		543		544		545	
546		547		548		549		550		551		552	
553		554		555		556		557		558		559	
560		561		562		563		564		565		566	
567		568		569		570		571		572		573	
574		575		576		577		578		579		580	
581		582		583		584		585		586		587	
588		589		590		591		592		593		594	
595		596		597		598		599		600		601	
602		603		604		605		606		607		608	
609		610		611		612		613		614		615	
616		617		618		619		620		621		622	
623		624		625		626		627		628		629	
630		631		632		633		634		635		636	
637		638		639		640		641		642		643	
644		645		646		647		648		649		650	
651		652		653		654		655		656		657	
658		659		660		661		662		663		664	
665		666		667		668		669		670		671	
672		673		674		675		676		677		678	
679		680		681		682		683		684		685	
686		687		688		689		690		691		692	
693		694		695		696		697		698		699	
700		701		702		703		704		705		706	
707		708		709		710		711		712		713	
714		715		716		717		718		719		720	
721		722		723		724		725		726		727	
728		729		730		731		732		733		734	
735		736		737		738		739		740		741	
742		743		744		745		746		747		748	
749		750		751		752		753		754		755	
756		757		758		759		760		761		762	
763		764		765		766		767		768		769	
770		771		772		773		774		775		776	
777		778		779		780		781		782		783	
784		785		786		787		788		789		790	
791		792		793		794		795		796		797	
798		799		800		801		802		803		804	
805		806		807		808		809		810		811	
812		813		814		815		816		817		818	
819		820		821		822		823		824		825	
826		827		828		829		830		831		832	
833		834		835		836		837		838		839	
840		841		842		843		844		845		846	
847		848		849		850		851		852		853	
854		855		856		857		858		859		860	
861		862		863		864		865		866		867	
868		869		870		871		872		873		874	
875		876		877		878		879		880		881	
882		883		884		885		886		887		888	
889		890		891		892		893		894		895	
896		897		898		899		900		901		902	
903		904		905		906		907		908		909	
910		911		912		913		914		915		916	
917		918		919		920		921		922		923	
924		925		926									

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

- σ_i = Standard deviation of the combined error estimates at standard oceanographic depth,
 ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $1/3 (V_{i_1} - V_{i_2})$
 γ = Interpolation polynomial coefficient.
 Z_j = Observed depth.
 Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the combined measurement and interpolation error estimate. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the interpolation error estimate is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

- (1) CRUISE REFERENCE NUMBER: Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC
- (2) CONSECUTIVE NUMBER: Indicates the chronological order in which the stations were occupied.
- (3) LATITUDE: Indicate the position of the platform at the time of observation
- (4) LONGITUDE:
- (5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).
- (6) YEAR:
- (7) MONTH:
- (8) DAY:
- (9) HOUR: The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.
- (10) COUNTRY/INSTITUTE: The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.
- (11) DEPTH: The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".
- (12) MAXIMUM SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).
00 m - 50 m = 00
51 m - 150 m = 01
151 m - 250 m = 02
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the **predominant non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE
(WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED
(WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_3
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01°C . Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 \text{ C1}\%$, reported in:
 a. 1/100 parts per 1000, or
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

- (8) PO_4 Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
- (9) -P- Total Phosphorus reported to hundredths of microgram-atoms per litre.
- (10) NO_2 Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre — No dissolved nitrogen included —
- (11) NO_3 Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
- (12) SiO_2 Silicate-Silicon reported to tenths of microgram-atoms per litre.
- (13) pH The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY: **A.** The reported salinity values are measured to three decimal places.
 (i) the interpolation error estimate is less than twice the standard deviation of measurement
 —the interpolated value is reported to three decimal places (e.g., 30.139).
 (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 —the interpolated value is reported to two decimal places, and followed by the **interpolation error estimate** (e.g., 29.23 C).
B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 —the interpolated value is reported to two decimal places, and followed by the **combined measurement and interpolation error estimate** (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "Introduction" to section II of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^p \delta dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = 1/g \int_0^p p \delta dp = \int_0^z \rho p \delta dz$$
- χ is expressed in units of 10^8 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

† (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

* (Asterisk): this character may occur in the interpolated portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one observed depth interval. The third, and all consequent levels within that interval are preceded by the asterisk to indicate that more than two machine interpolations were carried out, utilizing the same set of interpolation parabolas.

+ this character may occur immediately following an interpolated value for temperature, salinity or dissolved oxygen at standard oceanographic depths. Its purpose is to indicate that the Rattray interpolation has been substituted by a linear interpolation. The OCEANS II computer program automatically branches to a linear interpolation routine when the Rattray error estimate is ≥ 5 .

Q appears occasionally in this data record, preceding an observed oxygen value. This "questionable" indicator infers that the value does not fit the usual pattern of oxygen distribution. It could be due to a sampling error and generally not a determination methods error.

MARSDEN SQUARE CHART

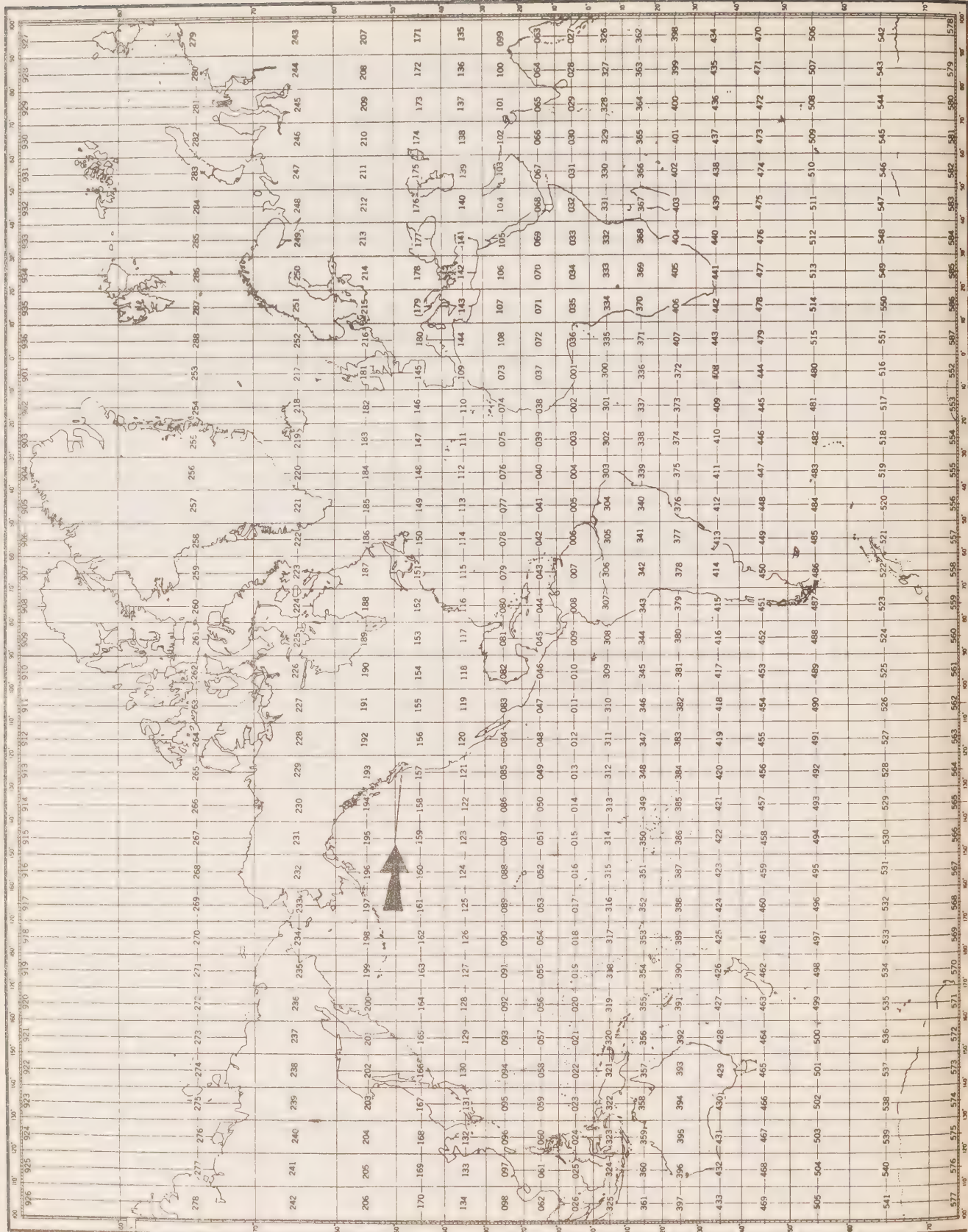


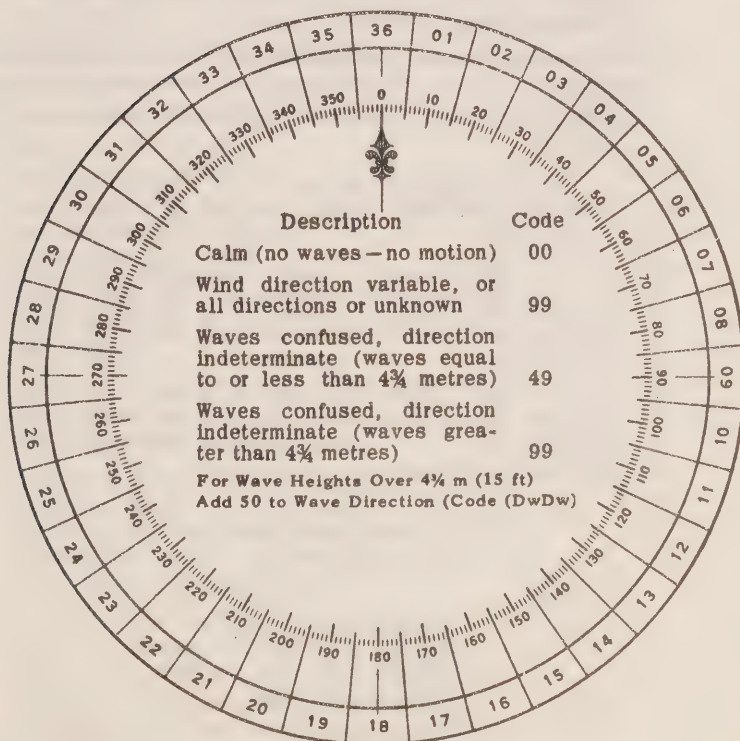
Table 1
CONVERSION
MINUTES TO $\frac{1}{10}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (P_w)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (H_w)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than $\frac{1}{4}$ m (1 ft)		0 5 m (16 ft)
1	$\frac{1}{2}$ m ($1\frac{1}{2}$ ft)		1 $5\frac{1}{2}$ m (17 $\frac{1}{2}$ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	$1\frac{1}{2}$ m (5 ft)	Add	3 $6\frac{1}{2}$ m (21 ft)
4	2 m ($6\frac{1}{2}$ ft)	50	4 7 m (22 $\frac{1}{2}$ ft)
5	$2\frac{1}{2}$ m (8 ft)	to	5 $7\frac{1}{2}$ m (24 ft)
6	3 m ($9\frac{1}{2}$ ft)	Dw Dw	6 8 m (25 $\frac{1}{2}$ ft)
7	$3\frac{1}{2}$ m (11 ft)		7 $8\frac{1}{2}$ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	$4\frac{1}{2}$ m (14 ft)		9 $9\frac{1}{2}$ m (30 $\frac{1}{2}$ ft) or more
x	Height not determined		

Add
50
to
Dw Dw

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww	
No meteors except photometeors	00 Cloud development not observed or not observable
	01 Clouds generally dissolving or becoming less developed
	02 State of sky on the whole unchanged
	03 Clouds generally forming or developing
Haze, dust, sand or smoke	04 Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes
	05 Haze
	06 Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation
	07 Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen
	08 Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm
	09 Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour
	10 Mist
	11 Patches of shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on continuous land or 10 metres at sea
	12 More of less
	13 Lightning visible, no thunder heard
	14 Precipitation within sight, not reaching the ground or the surface of the sea
	15 Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station
	16 Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station
	17 Thunderstorm, but no precipitation at the time of observation
	18 Squalls
	19 Funnel clouds
at or within sight of the station during the preceding hour or at the time of observation	

ww = 20 - 29	Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	not falling as shower(s)
20	Drizzle (not freezing) or snow grains	
21	Rain (not freezing)	
22	Snow	
23	Rain and snow or ice pellets, type (a)	
24	Freezing drizzle or freezing rain	
25	Shower (s) of rain	
26	Shower (s) of snow, or of rain and snow	
27	Shower (s) of hail, or of rain and hail	
28	Fog or ice fog	
29	Thunderstorm (with or without precipitation)	
ww = 30 - 39	Duststorm, sandstorm, drifting or blowing snow	
30	Slight or moderate dust-storm or sand-storm	- has decreased during the preceding hour
31		- no appreciable change during the preceding hour
32		- has begun or has increased during the preceding hour
33	Severe dust-storm or sand-storm	- has decreased during the preceding hour
34		- no appreciable change during the preceding hour
35		- has begun or has increased during the preceding hour
36	Slight or moderate blowing snow	generally low (below eye level)
37	Heavy drifting snow	
38	Slight or moderate blowing snow	generally high (above eye level)
39	Heavy blowing snow	
ww = 40 - 49	Fog or ice fog at the time of observation	
40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
41	Fog or ice fog in patches	
42	Fog or ice fog, sky visible	has become thinner during the preceding hour
43	Fog or ice fog, sky invisible	
44	Fog or ice fog, sky visible	no appreciable change during the preceding hour
45	Fog or ice fog, sky invisible	
46	Fog or ice fog, sky visible	has begun or has become thicker during the preceding hour
47	Fog or ice fog, sky invisible	
48	Fog, depositing rime, sky visible	
49	Fog, depositing rime, sky invisible	

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

- | | | | |
|----|--|---|--------------------------------------|
| 50 | Drizzle, not freezing, intermittent | { | slight at time of observation |
| 51 | Drizzle, not freezing, continuous | | |
| 52 | Drizzle, not freezing, intermittent | { | moderate at time of observation |
| 53 | Drizzle, not freezing, continuous | | |
| 54 | Drizzle, not freezing, intermittent | { | heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous | | |
| 56 | Drizzle, freezing, slight | | |
| 57 | Drizzle, freezing, moderate or heavy (dense) | | |
| 58 | Drizzle and rain, slight | | |
| 59 | Drizzle and rain, moderate or heavy | | |

ww = 60 - 69 Rain

- | | | | |
|----|---|---|---------------------------------|
| 60 | Rain, not freezing, intermittent | { | slight at time of observation |
| 61 | Rain, not freezing, continuous | | |
| 62 | Rain, not freezing, intermittent | { | moderate at time of observation |
| 63 | Rain, not freezing, continuous | | |
| 64 | Rain, not freezing, intermittent | { | heavy at time of observation |
| 65 | Rain, not freezing, continuous | | |
| 66 | Rain, freezing, slight | | |
| 67 | Rain, freezing, moderate or heavy | | |
| 68 | Rain or drizzle and snow, slight | | |
| 69 | Rain or drizzle and snow, moderate or heavy | | |

70 - 79 Solid precipitation not in showers

- | | | | |
|----|---|---|---------------------------------|
| ww | | | |
| 70 | Intermittent fall of snow flakes | { | slight at time of observation |
| 71 | Continuous fall of snow flakes | | |
| 72 | Intermittent fall of snow flakes | { | moderate at time of observation |
| 73 | Continuous fall of snow flakes | | |
| 74 | Intermittent fall of snow flakes | { | heavy at time of observation |
| 75 | Continuous fall of snow flakes | | |
| 76 | Ice prisms (with or without fog) | | |
| 77 | Snow grains (with or without fog) | | |
| 78 | Isolated starlike snow crystals (with or without fog) | | |
| 79 | Ice pellets, type (a) | | |

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- | | | | |
|----|--|---|---|
| 80 | Rain shower(s), slight | | |
| 81 | Rain shower(s), moderate or heavy | | |
| 82 | Rain shower(s), violent | | |
| 83 | Shower(s) of rain and snow mixed, slight | | |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy | | |
| 85 | Snow shower(s), slight | | |
| 86 | Snow shower(s), moderate or heavy | | |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed | { | - slight |
| 88 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | | |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | { | - moderate or heavy |
| 90 | Slight rain at time of observation | | |
| 91 | Moderate or heavy rain at time of observation | { | thunderstorm during the preceding hour but not at time of observation |
| 92 | Slight snow, or rain and snow mixed or hail at time of observation | | |
| 93 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation | { | - slight |
| 94 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | | |
| 95 | Thunderstorm, slight or moderate, with hail at time of observation | { | - moderate or heavy |
| 96 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | | |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation | { | thunderstorm at time of observation |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation | | |
| 99 | Thunderstorm, heavy, with hail at time of observation | | |

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, dust storm, sand storm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{3}{4}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11C.C.O. Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N.B.
04. Arctic Biological Station, St. Anne de Bellevue, P.Q.
05. Biological Station, St. John's Nfld.
06. Station de Biologie Marine, Grande Riviere, P.Q.
07. Canadian Hydrographic Service.
08. Naval Research Establishment, Dartmouth, N.S.
09. Pacific Naval Laboratory, Esquimalt, B.C.
10. Bedford Institute of Oceanography
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Inland Region, Oceanographic Research, Ottawa.
14. Institute of Oceanography, Dalhousie University.

SECTION. III

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Pacific Oceanographic Group Nanaimo, B.C.
<u>Observation Platform:</u>	C.C.G.S. "St. Catharines" and C.C.G.S. "Stonetown"
<u>Vessels' Cruising Speed:</u>	13 knots
<u>Total Number of Stations Occupied:</u>	23
<u>Anemometer Height Above Sea Level:</u>	19 metres
<u>Water transparency:</u>	Secchi Disc.
<u>Barometer readings:</u>	Aneroid Barometer (corrected)
<u>Air temperature:</u>	Sling Psychrometer
<u>Wet bulb temperature:</u>	Sling Psychrometer
<u>Surface sea water temperature:</u>	Bucket sample (deck thermometer)
<u>Depth to bottom:</u>	U.S. Coast and Geodetic Survey Chart 8500

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003
Oxygen	0.03

C-REF-NO 004	YR 1964	DEPTH C 1298	WAVES 1 31X3	AIR T 10.5	VIS 9
CONS. NO 001	MONTH 5	MXSAMPD 04	WAVES 2 27X3	WET B 08.8	STN 001
LAT 48-42 N	DAY 16	NO.DPTH 14	WND-DIR 310	WW-CODE 02	
LON 126-40 W	HR 03.0	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1017.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
030	0000	093 B	32275		2496	14843
030	0010	0892 C	32209		2497	14830
030	0020	0840 B	32226		2506	14812
030	0030	0811	32259		2513	14803
030	0050	0780 B	32515		2538	14797
030	0075	0728	33296		2606	14791
030	0100	0707 B	33672		2639	14792
030	0125	0682	33801		2652	14788
030	0150	0655 B	33871		2661	14782
030	0175	0628	33901		2667	14776
030	0200	0611 B	33923		2671	14774
030	0250	0562	33967		2681	14763
030	0300	0529	34015		2688	14758
030	0400	0489	34083		2698	14759

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0930 B	32275		2496	14843	0000	00000	3003
0010	0892 C	32209		2497	14830	0030	00002	2997
0020	0840 B	32226		2506	14812	0060	00006	2911
0030	0811	32259		2513	14803	0089	00013	2847
0050	0780 B	32515		2538	14797	0144	00036	2617
0075	0728	33296		2606	14791	0201	00072	1969
0100	0707 B	33672		2639	14792	0247	00112	1665
0125	0682	33801		2652	14788	0288	00159	1539
0150	0655 B	33871		2661	14782	0325	00212	1456
0175	0628	33901		2667	14776	0361	00272	1403
0200	0611 B	33923		2671	14774	0396	00339	1368
0225	0587 B	33945		2676	14768	0430	00413	1325
0250	0562	33967		2681	14763	0463	00493	1281
0300	0529	34015		2688	14758	0526	00670	1212
0400	0489	34083		2698	14759	0644	01092	1125

C-REF-NO 004	YR 1964	DEPTH C 2496	WAVES 1 31X1	AIR T 11.1	VIS 7
CONS. NO 002	MONTH 5	MXSAMPD 20	WAVES 2 27X2	WET B 08.3	STN 002
LAT 48-48 N	DAY 16	NO.DPTH 21	WND-DIR 310	WW-CODE 02	
LON 127-40 W	HR 07.4	W-COLOR	WND-SPD 07	CLD-TPE 1	
MARSD SQ 157	C/I 1802	W-TRNSP	BAKO 1015.0	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
074	0000	089 B	32169		2494	14827
074	0010	0873 B	32137		2494	14822
074	0020	0819 B	32139		2502	14803
074	0030	0796	32147		2506	14795
074	0050	0783 B	32217		2514	14795
074	0075	0769 B	32396		2530	14796
074	0100	0731 B	33084		2589	14794
076	0125	0698	33615		2635	14792
076	0150	0689 B	33769		2649	14795
076	0175	0674	33857		2658	14794
076	0199	0652 B	33912		2665	14790
076	0249	0595 B	33938		2674	14776
076	0299	0552	33953		2681	14767
076	0399	0489	34018		2693	14758
082	0492	0455	34089		2703	14760
082	0590	0428	34172		2712	14766
082	0788	0386	34295		2726	14783
082	0985	0340	34389		2738	14798
082	1182	0298	34461		2748	14814
082	1480	0248	34524		2757	14843
082	1978	0194	34604		2768	14905

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0890 B	32169		2494	14827	0000	00000	3022
0010	0873 B	32137		2494	14822	0030	00002	3023
0020	0819 B	32139		2502	14803	0060	00006	2946
0030	0796	32147		2506	14795	0090	00014	2910
0050	0783 B	32217		2514	14795	0148	00037	2843
0075	0769 B	32396		2530	14796	0217	00082	2694
0100	0731 B	33084		2589	14794	0278	00135	2134
0125	0698	33615		2635	14792	0326	00190	1699
0150	0689 B	33769		2649	14795	0368	00248	1576
0175	0674	33857		2658	14794	0406	00313	1494
0200	0651 B	33913		2665	14790	0443	00383	1426
0225	0622 B	3393 B		2670	14783	0478	00460	1378
0250	0594 B	33938		2674	14775	0513	00544	1342
0300	0551	33954		2681	14766	0579	00730	1284
0400	0489	34019		2693	14758	0703	01173	1173

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0453	34096		2703	14761	0817	01698	1084
0600	0426	34179		2713	14767	0922	02291	1001
0700	0404	34246		2720	14776	1020	02943	0935
0800	0383	34301		2727	14784	1112	03649	0879
1000	0337	34395		2739	14799	1279	05184	0772
1200	0295	34466		2749	14816	1426	06846	0685
1500	0244	3454 B		2759	14845	1621	09527	0592
2000	0193	34605		2768	14909	1899	14494	0504

C-REF-NO 004	YR 1964	DEPTH C 2532	WAVES 1 31X1	AIR T 07.7	VIS 8
CONS. NO 003	MONTH 5	MXSAMPD 20	WAVES 2 27X2	WET B 05.5	STN 003
LAT 48-51 N	DAY 16	NO.DPTH 21	WND-DIR 310	WW-CODE 02	
LON 128-40 W	HR 12.0	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1014.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
120	0000	091 B	32415		2510	14837
120	0010	0876	32376		2512	14826
120	0020	0834 B	32368		2518	14811
120	0030	0829	32368		2519	14811
120	0050	0782 B	32470		2534	14798
120	0075	0774	32513		2538	14799
120	0100	0746 B	32583		2548	14793
120	0125	0737	33258		2602	14803
120	0150	0700 B	33629		2636	14797
120	0175	0682	33783		2651	14796
120	0200	0661 B	33858		2659	14793
120	0250	0607	33926		2672	14780
120	0300	0558	33954		2680	14769
120	0400	0480	34012		2694	14754
127	0500	0461	34116		2704	14765
127	0600	0428	34188		2713	14768
127	0800	0376	34304		2728	14781
127	1000	0328 B	34403		2740	14796
127	1200	0290	34470		2749	14814
127	1500	0243	34530		2758	14845
127	2000	0195	34602		2768	14910

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	0910 B	32415		2510	14837	0000	00000	2869
0010	0876	32376		2512	14826	0029	00001	2850
0020	0834 B	32368		2518	14811	0057	00006	2797
0030	0829	32368		2519	14811	0085	00013	2791
0050	0782 B	32470		2534	14798	0140	00035	2653
0075	0774	32513		2538	14799	0206	00078	2614
0100	0746 B	32583		2548	14793	0271	00136	2527
0125	0737	33258		2602	14803	0328	00201	2017
0150	0700 B	33629		2636	14797	0375	00266	1695
0175	0682	33783		2651	14796	0416	00334	1560
0200	0661 B	33858		2659	14793	0454	00408	1480
0225	0635 B	33901		2666	14787	0491	00487	1418
0250	0607	33926		2672	14780	0526	00573	1367
0300	0558	33954		2680	14769	0593	00762	1292
0400	0480	34012		2694	14754	0717	01205	1168

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0461	34116		2704	14764	0830	01727	1079
0600	0428	34188		2713	14768	0935	02317	0997
0700	0401	34249		2721	14774	1032	02966	0929
0800	0376	34304		2728	14781	1123	03665	0869
1000	0328 B	34403		2740	14796	1288	05176	0756
1200	0290	34470		2749	14814	1433	06812	0677
1500	0243	34530		2758	14845	1627	09486	0596
2000	0195	34602		2768	14910	1907	14496	0509

C-REF-NO 004	YR 1964	DEPTH C 2935	WAVES 1 00X0	AIR T 12.4	VIS 7
CONS. NO 004	MONTH 5	MXSAMPD 15	WAVES 2 3023	WET B 10.2	STN 004
LAT 49-02 N	DAY 16	NO.DPTH 20	WND-DIR CALM	WW-CODE 02	
LON 130-40 W	HR 19.4	W-COLOR 10	WND-SPD 00	CLD-TPE 6	
MARSD SQ 158	C/I 1802	W-TRNSP 10	BARO 1011.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0000	097 B	32608		2516	14862
194	0010	0837	32490		2527	14812
194	0020	0817 B	32482		2530	14806
194	0030	0810	32480		2530	14805
194	0050	0772 B	32508		2538	14794
194	0075	0730	32864		2572	14787
194	0100	0694 B	33390		2618	14783
194	0125	0660	33601		2639	14777
194	0150	0666 B	33817		2655	14786
194	0175	0618	33862		2665	14772
194	0200	0591 B	33904		2672	14765
194	0250	0536	33914		2680	14752
194	0300	0507	33947		2685	14748
194	0400	0498	34080		2697	14763
199	0500	0467	34130		2705	14767
199	0600	0418	34220		2717	14765
199	0800	0369	34324		2730	14779
199	1000	0322 B	34400		2741	14793
199	1200	0282	34462		2749	14810
199	1500	0238	34523		2758	14842

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0970 B	32608		2516	14862	0000	00000	2817
0010	0837	32490		2527	14812	0028	00001	2709
0020	0817 B	32482		2530	14806	0055	00006	2688
0030	0810	32480		2530	14805	0082	00012	2681
0050	0772 B	32508		2538	14794	0135	00034	2611
0075	0730	32864		2572	14787	0197	00073	2293
0100	0694 B	33390		2618	14783	0249	00119	1858
0125	0660	33601		2639	14777	0293	00170	1660
0150	0666 B	33817		2655	14786	0333	00226	1510
0175	0618	33862		2665	14772	0370	00288	1419
0200	0591 B	33904		2672	14765	0405	00355	1358
0225	0562 B	3391 B		2676	14758	0439	00428	1318
0250	0536	33914		2680	14751	0472	00509	1290
0300	0507	33947		2685	14748	0536	00688	1237
0400	0498	34080		2697	14763	0655	01116	1138
0500	0467	34130		2705	14767	0767	01631	1075

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0418	34220		2717	14765	0870	02210	0962
0700	0389 B	34280		2725	14770	0964	02835	0893
0800	0369	34324		2730	14779	1052	03512	0846
1000	0322 B	34400		2741	14793	1213	04999	0752
1200	0282	34462		2749	14810	1358	06627	0674
1500	0238	34523		2758	14842	1551	09294	0595

C-REF-NO 004	YR 1964	DEPTH C 3273	WAVES 1 18X2	AIR T 09.9	VIS B
CONS. NO 005	MONTH 5	MXSAMPD 15	WAVES 2 2733	WET B 08.3	STN 005
LAT 49-10 N	DAY 17	NO.DPTH 20	WND-DIR 180	WW-CODE 02	
LON 132-40 W	HR 03.4	W-COLOR 10	WND-SPD 07	CLD-TPE 6	
MARSD SQ 158	C/I 1802	W-TRNSP 10	BARO 1007.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
034	0000	086 B	32665		2537	14822
034	0010	0822 B	32560		2535	14808
034	0020	0748 B	32545		2544	14780
034	0030	0742	32544		2545	14780
034	0049	0696 B	32561		2553	14765
034	0074	0678 B	32563		2555	14762
034	0099	0673 B	32566		2556	14764
034	0123	0646	32716		2571	14759
034	0148	0618 B	33462		2634	14762
034	0173	0609	33738		2657	14766
034	0197	0599 B	33820		2664	14767
034	0247	0572	33878		2672	14765
034	0297	0517	33909		2681	14751
034	0397	0440	33966		2694	14737
038	0482	0430	34044		2702	14748
038	0581	0399	34126		2711	14752
038	0778	0359	34263		2726	14770
038	0977	0320	34358		2738	14788
038	1176	0281	34427		2747	14805
038	1475	0242	34496		2756	14840

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0860 B	32665		2537	14822	0000	00000	2610
0010	0822 B	32560		2535	14808	0026	00001	2635
0020	0748 B	32545		2544	14780	0052	00005	2547
0030	0742	32544		2545	14780	0078	00012	2541
0050	0695 B	32561		2553	14765	0128	00033	2470
0075	0678 B	32562		2555	14762	0190	00072	2451
0100	0672 B	32565		2556	14764	0252	00127	2444
0125	0643	3277 D		2576	14759	0311	00195	2256
0150	0617 B	33496		2637	14762	0361	00265	1687
0175	0608	33749		2658	14766	0401	00331	1491
0200	0598 B	33826		2665	14767	0438	00402	1424
0225	0586	3386 B		2669	14767	0473	00479	1385
0250	0569	33880		2673	14764	0507	00563	1355
0300	0514	33910		2682	14751	0574	00749	1272
0400	0439	33969		2695	14737	0696	01186	1154
0500	0425	34060		2703	14749	0809	01706	1080

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0394	34141		2713	14754	0914	02296	0994
0700	0373	34213		2721	14762	1011	02942	0925
0800	0355	34275		2728	14772	1101	03639	0866
1000	0315	34367		2739	14790	1267	05160	0768
1200	0279	34436		2748	14809	1414	06825	0690
1500	0239	34499		2756	14843	1613	09567	0614

C-REF-NO 004	YR 1964	DEPTH C 3557	WAVES 1 16X2	AIR T 07.7	VIS 7
CONS. NO 006	MONTH 5	MXSAMPD 04	WAVES 2 1633	WET B 06.6	STN 006
LAT 49-20 N	DAY 17	NO.DPTH 14	WND-DIR 160	WW-CODE 02	
LON 134-40 W	HR 10.7	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 158	C/I 1802	W-TRNSP	BARO 1001.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
107	0000	075 B	32595		2548	14779
107	0009	0736	32584		2549	14774
107	0018	0735 B	32577		2549	14775
107	0028	0731	32581		2550	14776
107	0046	0706 B	32584		2553	14769
107	0069	0658	32583		2559	14753
107	0092	0656 B	32592		2560	14756
107	0115	0641	32641		2566	14755
107	0138	0609 B	33257		2619	14754
107	0161	0646	33690		2648	14778
107	0185	0634 B	33813		2659	14779
107	0233	0577 B	33917		2675	14765
107	0281	0530	33937		2682	14754
107	0379	0466	34008		2695	14745

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0750 B	32595		2548	14779	0000	00000	2510
0010	0736	32583		2549	14774	0025	00001	2501
0020	0735 B	32577		2549	14776	0050	00005	2505
0030	0729	32582		2550	14775	0076	00012	2496
0050	0697 B	32584		2554	14766	0125	00032	2455
0075	0656	32583		2560	14754	0187	00071	2408
0100	0652	3258 G		2560	14756	0247	00126	2413
0125	0624 B	3289 I		2588	14753	0305	00191	2149
0150	0627 C	3351 B		2637	14767	0353	00259	1687
0175	0643 B	3379 D		2656	14781	0393	00326	1508
0200	0618 B	3386 B		2665	14776	0430	00397	1424
0225	0588 B	33909		2673	14768	0465	00473	1353
0250	0559	33928		2678	14761	0499	00554	1307
0300	0514 B	3398 E		2687	14752	0562	00734	1222

C-REF-NO 004	YR 1964	DEPTH C 3767	WAVES 1 20X2	AIR T 08.3	VIS B
CONS. NO 007	MONTH 5	MXSAMPD 20	WAVES 2 4933	WET B 06.6	STN 007
LAT 49-26 N	DAY 17	NO.DPTH 21	WND-DIR 200	WW-CODE 02	
LON 136-40 W	HR 17.4	W-COLOR 10	WND-SPD 06	CLD-TPE 8	
MARSD SQ 158	C/I 1802	W-TRNSP 09	BARO 998.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
174	0000	085 B	32560		2531	14817
174	0010	0728 B	32517		2545	14771
174	0020	0728 B	32512		2545	14772
174	0030	0724 B	32533		2547	14772
174	0050	0678 B	32619		2560	14759
174	0075	0640 B	32613		2564	14748
174	0100	0617 B	32636		2569	14743
174	0125	0585	32848		2589	14737
174	0150	0563 B	33480		2642	14740
174	0175	0556	33712		2661	14745
174	0200	0534 B	33789		2670	14741
174	0250	0494 B	33838		2678	14733
174	0300	0452	33876		2686	14725
174	0400	0415	34003		2700	14727
180	0500	0408	34078		2707	14742
180	0600	0384	34151		2715	14749
180	0800	0341	34285		2730	14766
180	1000	0298	34374		2741	14782
180	1200	0272	34436		2748	14805
180	1500	0238	34503		2756	14842
180	2000	0194	34595		2767	14909

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0850 B	32560		2531	14817	0000	00000	2674
0010	0728 B	32517		2545	14771	0026	00001	2540
0020	0728 B	32512		2545	14772	0052	00005	2545
0030	0724 B	32533		2547	14772	0077	00012	2526
0050	0678 B	32619		2560	14759	0127	00032	2405
0075	0640 B	32613		2564	14748	0187	00070	2366
0100	0617 B	32636		2569	14743	0246	00123	2324
0125	0585	32848		2589	14737	0302	00188	2130
0150	0563 B	33480		2642	14740	0349	00254	1634
0175	0556	33712		2661	14745	0388	00318	1456
0200	0534 B	33789		2670	14741	0424	00387	1375
0225	0514 B	3382 B		2675	14737	0458	00461	1329
0250	0494 B	33838		2678	14733	0491	00542	1298
0300	0452	33876		2686	14725	0555	00721	1228
0400	0415	34003		2700	14727	0672	01141	1102

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0408	34078		2707	14742	0781	01641	1047
0600	0384	34151		2715	14749	0883	02217	0975
0700	0362	34222		2723	14758	0978	02850	0906
0800	0341	34285		2730	14766	1067	03531	0844
1000	0298	34374		2741	14782	1227	05009	0744
1200	0272	34436		2748	14805	1372	06639	0682
1500	0238	34503		2756	14842	1568	09355	0610
2000	0194	34595		2767	14909	1854	14441	0513

C-REF-NO 004	YR 1964	DEPTH C 3886	WAVES 1 00X0	AIR T 11.6	VIS
CONS. NO 008	MONTH 5	MXSAMPD 15	WAVES 2 4932	WET B 09.4	STN 008
LAT 49-35 N	DAY 18	NO.DPTH 20	WND-DIR CALM	WW-CODE 02	
LON 138-40 W	HR 01.2	W-COLOR 10	WND-SPD 00	CLD-TPE 8	
MARSD SQ 158	C/I 1802	W-TRNSP 25	BAKO 1001.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
012	0000	076 B	32689		2554	14784
012	0010	0711 B	32669		2559	14766
012	0020	0689 B	32712		2566	14759
012	0030	0679	32713		2567	14757
012	0050	0648 B	32716		2571	14748
012	0075	0595	32724		2578	14731
012	0100	0564 B	32748		2584	14723
012	0125	0554	33118		2614	14728
015	0150	0546 B	33659		2658	14736
015	0175	0557	33811		2669	14746
015	0200	0540 B	33855		2674	14744
015	0250	0497	33901		2683	14735
015	0300	0453	33925		2690	14726
015	0400	0418	34013		2701	14729
019	0500	0400	34118		2711	14739
019	0600	0374	34196		2720	14746
019	0800	0332	34311		2733	14763
019	1000	0300	34379		2741	14783
019	1200	0269	34443		2749	14804
019	1500	0235	34515		2758	14841

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0760 B	32689		2554	14784	0000	00000	2453
0010	0711 B	32669		2559	14766	0024	00001	2405
0020	0689 B	32712		2566	14759	0048	00005	2346
0030	0679	32713		2567	14757	0072	00011	2334
0050	0648 B	32716		2571	14748	0118	00030	2296
0075	0595	32724		2578	14731	0175	00066	2229
0100	0564 B	32748		2584	14723	0231	00116	2177
0125	0554	33118		2614	14728	0282	00175	1892
0150	0546 B	33659		2658	14736	0325	00234	1481
0175	0557	33811		2669	14746	0361	00294	1383
0200	0540 B	33855		2674	14744	0395	00360	1333
0225	0519 B	33883		2679	14740	0428	00432	1291
0250	0497	33901		2683	14735	0460	00510	1255
0300	0453	33925		2690	14726	0522	00684	1193
0400	0418	34013		2701	14729	0637	01097	1098
0500	0400	34118		2711	14739	0744	01586	1009

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0374	34196		2720	14746	0842	02138	0931
0700	0352	34260		2727	14754	0932	02744	0867
0800	0332	34311		2733	14763	1017	03398	0815
1000	0300	34379		2741	14783	1175	04850	0743
1200	0269	34443		2749	14804	1318	06468	0673
1500	0235	34515		2758	14841	1512	09140	0598

C-REF-NO 004	YR 1964	DEPTH C 3913	WAVES 1 33X2	AIR T 07.7	VIS 7
CONS. NO 009	MONTH 5	MXSAMPD 15	WAVES 2 1023	WET B 07.2	STN 010
LAT 49-49 N	DAY 18	NO.DPTH 20	WND-DIR 330	WW-CODE 02	
LONG 142-40 W	HR 19.4	W-COLOR 10	WND-SPD 07	CLD-TPE 7	
MARSD SQ 159	C/I 1802	W-TRNSP 14	BARO 1017.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0000	069 B	32867		2578	14759
194	0010	0646	32791		2577	14742
194	0020	0632 B	32794		2579	14738
194	0030	0609	32786		2582	14730
194	0050	0578 B	32791		2586	14721
194	0075	0522	32789		2592	14702
194	0100	0491 B	32802		2597	14693
194	0125	0471	33331		2641	14696
194	0150	0438 B	33600		2666	14690
194	0175	0421	33659		2672	14688
194	0200	0404 B	33724		2679	14686
194	0250	0391	33806		2687	14690
194	0300	0382	33876		2693	14695
194	0400	0379	34010		2704	14712
200	0500	0368	34114		2714	14725
200	0600	0358	34204		2722	14739
200	0800	0321 B	34308		2734	14758
200	1000	0290	34387		2743	14779
200	1200	0264	34443		2749	14802
200	1500	0236	34512		2757	14841

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0690 B	32867		2578	14759	0000	00000	2229
0010	0646	32791		2577	14742	0022	00001	2232
0020	0632 B	32794		2579	14738	0045	00005	2214
0030	0609	32786		2582	14730	0067	00010	2194
0050	0578 B	32791		2586	14721	0111	00028	2156
0075	0522	32789		2592	14702	0164	00062	2097
0100	0491 B	32802		2597	14693	0217	00109	2056
0125	0471	33331		2641	14696	0263	00162	1640
0150	0438 B	33600		2666	14690	0301	00216	1406
0175	0421	33659		2672	14688	0336	00274	1346
0200	0404 B	33724		2679	14686	0369	00338	1282
0225	0396 B	33770		2684	14687	0401	00407	1241
0250	0391	33806		2687	14690	0432	00482	1212
0300	0382	33876		2693	14695	0492	00650	1154
0400	0379	34010		2704	14712	0603	01049	1059
0500	0368	34114		2714	14725	0706	01523	0977

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0358	34204		2722	14739	0801	02059	0907
0700	0341	34264		2728	14749	0890	02652	0852
0800	0321 B	34308		2734	14758	0974	03297	0805
1000	0290	34387		2743	14779	1129	04724	0726
1200	0264	34443		2749	14802	1270	06317	0668
1500	0236	34512		2757	14841	1463	08986	0601

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 2924	AIR T 06.1	VIS 7
CONS. NO 010	MONTH 5	MXSAMPD 04	WAVES 2 2925	WET B 05.5	STN
LAT 49-57 N	DAY 21	NO.DPTH 14	WND-DIR 290	WW-CODE 02	
LON 144-57 W	HR 19.1	W-COLOR 10	WND-SPD 11	CLD-TPE 7	
MARSD SQ 159	C/I 1802	W-TRNSP 13	BARO 1031.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	065 B	32837	768	2580	14742
191	0009	0621	32776	742	2579	14731
191	0018	0621 B	32771	748	2579	14733
191	0027	0621	32772	750	2579	14734
191	0045	0563 B	32777	753	2587	14714
191	0068	0502	32781	Q 715 B	2594	14693
191	0091	0491 B	32797	739	2596	14692
191	0113	0467	32972	685	2613	14688
191	0135	0396 B	33483	520	2661	14669
191	0157	0381 B	33619	446	2673	14668
191	0180	0378 B	33681	385	2678	14671
191	0224	0374	33772	292	2686	14678
191	0270	0369	33850	221	2693	14684
191	0367	0368	33980	155	2703	14702

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0650 B	32837	768	2580	14742	0000	00000	2201
0010	0620	32774	742	2579	14731	0022	00001	2214
0020	0622 B	32771	749	2579	14733	0045	00005	2219
0030	0614	32773	752	2580	14732	0067	00010	2209
0050	0547 B	32777	744	2588	14708	0110	00028	2131
0075	0497 B	3278 B	723 B	2594	14691	0163	00062	2079
0100	0485 B	3284 C	728	2600	14691	0215	00108	2022
0125	0428 C	3325 I	596 C	2639	14677	0261	00161	1654
0150	0382 B	3360 D	464	2671	14667	0299	00214	1350
0175	0378 B	33671	397	2677	14670	0332	00269	1294
0200	0376 B	33726	339	2682	14674	0365	00331	1253
0225	0374	33774	290	2686	14678	0396	00399	1217
0250	0371	33818	249	2690	14681	0426	00473	1183
0300	0369	33898	188	2696	14690	0484	00637	1124

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 24X1	AIR T 07.2	VIS 7
CONS. NO 011	MONTH 5	MXSAMPD 42	WAVES 2 2822	WET B 06.6	STN
LAT 50-00 N	DAY 24	NO.DPTH 26	WND-DIR 240	WW-CODE 02	
LON 144-50 W	HR 19.9	W-COLOR 10	WND-SPD 03	CLD-TPE 6	
MARSD SQ 195	C/I 1802	W-TRNSP 14	BARO 1031.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	068 B	32818	735 B	2575	14754
199	0010	0636 B	32774	750	2577	14737
199	0020	0633 B	32770	751	2577	14738
199	0029	0630	32769	756	2578	14738
202	0049	0538 B	32778	744	2590	14704
202	0073	0497	32781	743	2594	14691
202	0098	0466 B	32817	707	2601	14683
202	0123	0445 B	32996	678	2617	14681
202	0147	0388 B	33566	525	2668	14668
202	0172	0378	33670	410	2677	14670
202	0196	0376 B	33730	333	2682	14674
202	0245	0370	33815	259	2690	14680
202	0294	0370	33894	210	2696	14689
202	0392	0368	34013	148	2706	14706
202	0491	0362	34114	107	2714	14721
202	0589	0344	34211	083	2724	14731
212	0800	0315	34320	076	2735	14756
212	1000	0284	34398	072	2744	14777
212	1200	0261	34445 Q	058	2750	14801
212	1500	0228 B	34520	076	2759	14838
212	2000	0193	34594	139	2767	14909
212	2500	0171	34631	207	2772	14985
212	3000	0158	34650	279	2775	15066
212	3500	0154 B	34676	306	2777	15152
212	4000	0155	34680	333	2777	15240
212	4200	0154	34688	340	2778	15275

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0680 B	32818	735 B	2575	14754	0000	00000	2253
0010	0636 B	32774	750	2577	14737	0023	00001	2233
0020	0633 B	32770	751	2577	14738	0045	00005	2233
0030	0626	32769	756	2578	14737	0067	00010	2227
0050	0535 B	32778	744	2590	14703	0111	00028	2118
0075	0494	32781	741	2595	14690	0164	00062	2073
0100	0465 B	32821	707	2601	14683	0215	00108	2014
0125	0440 B	3305 D	667	2621	14680	0264	00163	1822
0150	0385 B	3359 C	509	2670	14668	0304	00219	1358
0175	0378	33679	399	2678	14670	0337	00275	1288

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	0375 B	33738	324	2683	14674	0369	00336	1243
0225	0372	33784	281	2687	14677	0400	00403	1208
0250	0370	33823	253	2690	14681	0430	00477	1177
0300	0370	33902	205	2697	14690	0488	00640	1122
0400	0368	34022	144	2706	14708	0597	01030	1038
0500	0361	34124	104	2715	14722	0698	01495	0962
0600	0342	34219	082	2724	14733	0791	02019	0880
0700	0328	3428 B	075	2731	14744	0877	02595	0828
0800	0315	34320	076	2735	14755	0959	03225	0790
1000	0284	34398	072	2744	14777	1111	04623	0711
1200	0261	34445	058	2750	14801	1250	06195	0663
1500	0228 B	34520	076	2759	14838	1440	08821	0586
2000	0193	34594	139	2767	14909	1719	13810	0512
2500	0171	34631	207	2772	14985	1971	19635	0476
3000	0158	34650	279	2775	15066	2210	26422	0461
3500	0154 B	34676	306	2777	15152	2443	34259	0451
4000	0155	34680	333	2777	15241	2678	43377	0464

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 49XX	AIR T 07.2	VIS
CONS. NO 012	MONTH 5	MXSAMPD 20	WAVES 2 2923	WET B 05.2	STN
LAT 49-56 N	DAY 27	NO.DPTH 21	WND-DIR 990	WW-CODE 02	
LON 144-54 W	HR 19.0	W-COLOR 10	WND-SPD 01	CLD-TPE 8	
MARSD SQ 159	C/I 1802	W-TRNSP 15	BARO 1015.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	075 B	32834	686 B	2567	14782
198	0010	0636 B	32755	754 B	2576	14737
198	0020	0633 B	32758	740 B	2576	14738
198	0030	0632	32759	743 B	2577	14739
198	0050	0622 B	32775	743 B	2579	14738
198	0075	0529	32789	746 B	2591	14705
198	0100	0486 B	32795	744 B	2597	14691
198	0125	0448	32881	711 B	2608	14681
198	0150	0410 B	33376	565 B	2651	14676
198	0175	0383 B	33610	453 B	2672	14671
198	0200	0380 B	33699	380 B	2679	14675
190	0200	0376	33712	381 B	2681	14674
190	0250	0371	33813	257 B	2689	14681
190	0300	0368	33896	195 B	2696	14690
190	0500	0360 B	34133	102 B	2716	14722
190	0750	0326	34285	073 B	2731	14751
190	1000	0288	34394	065 B	2743	14778
190	1250	0252 B	34466	066 B	2752	14806
190	1500	0231	34521	085 B	2758	14839
190	1750	0213	34557	113 B	2763	14874
190	2000	0197	34588	139 B	2767	14910

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0750 B	32834	686 B	2567	14782	0000	00000	2331
0010	0636 B	32755	754 B	2576	14737	0023	00001	2247
0020	0633 B	32758	740 B	2576	14738	0046	00005	2242
0030	0632	32759	743 B	2577	14739	0068	00010	2241
0050	0622 B	32775	743 B	2579	14738	0113	00029	2220
0075	0529	32789	746 B	2591	14705	0168	00064	2105
0100	0486 B	32795	744 B	2597	14691	0220	00110	2056
0125	0448	32881	711 B	2608	14681	0270	00169	1954
0150	0410 B	33376	565 B	2651	14676	0314	00230	1545
0175	0383 B	33610	453 B	2672	14671	0351	00290	1345
0200	0380 B	33699	380 B	2679	14675	0384	00354	1277
0225	0375 B	33763	313 B	2685	14678	0415	00423	1226
0250	0371	33813	257 B	2689	14681	0446	00497	1186
0300	0368	33896	195 B	2696	14689	0504	00661	1125
0400	0365 B	34030	129 C	2707	14706	0613	01049	1029

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0360 B	34133	102 B	2716	14722	0713	01510	0955
0600	0348 B	3421 B	083 B	2723	14735	0806	02037	0896
0700	0334	34263	074 B	2729	14746	0894	02624	0846
0800	0318	34310	070 B	2734	14757	0978	03265	0801
1000	0288	34394	065 B	2743	14778	1131	04681	0719
1200	0259 B	34454	065 B	2751	14800	1270	06249	0654
1500	0231	34521	085 B	2758	14839	1460	08863	0589
2000	0197	34588	139 B	2767	14910	1742	13911	0522

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 0821	AIR T 08.3	VIS 7
CONS. NO 013	MONTH 5	MXSAMPD 04	WAVES 2 49X2	WET B 07.7	STN
LAT 50-03 N	DAY 29	NO.DPTH 14	WND-DIR 070	WW-CODE 02	
LON 145-02 W	HR 19.5	W-COLOR 10	WND-SPD 07	CLD-TPE 2	
MARSD SQ 195	C/I 1802	W-TRNSP 13	BARO 1019.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
195	0000	076 B	32817	727 B	2564	14785
195	0010	0709 C	32749	739 B	2566	14766
195	0020	0633 B	32755	741 B	2576	14738
195	0030	0620	32758	743 B	2578	14734
195	0050	0521 B	32759	753 B	2590	14697
195	0075	0504	32767	744 B	2593	14694
195	0100	0474 B	32773	714 B	2596	14686
195	0125	0437	33141	624 B	2629	14680
195	0150	0372 B	33590	527 B	2672	14662
195	0175	0362		450 B		
195	0200	0356 B	33712	333 B	2683	14665
195	0250	0356	33799	242 B	2690	14675
195	0300	0356	33861	182 B	2695	14684
195	0400	0358	34011	104 B	2706	14703

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0760 B	32817	727 B	2564	14785	0000	00000	2357
0010	0709 C	32749	739 B	2566	14766	0024	00001	2343
0020	0633 B	32755	741 B	2576	14738	0047	00005	2244
0030	0620	32758	743 B	2578	14734	0069	00011	2228
0050	0521 B	32759	753 B	2590	14697	0113	00028	2116
0075	0504	32767	744 B	2593	14694	0166	00062	2094
0100	0474 B	32773	714 B	2596	14686	0218	00109	2060
0125	0437	33141	624 B	2629	14680	0266	00164	1747
0150	0372 B	33590	527 B	2672	14662	0305	00218	1347
0175	0362	3372 I	450 B	2683	14664	0338	00273	1243
0200	0356 B	33712	333 B	2683	14665	0369	00333	1244
0225	0355 B	33759	274 C	2687	14670	0400	00400	1209
0250	0356	33799	242 B	2690	14675	0430	00474	1182
0300	0356	33861	182 B	2695	14684	0489	00639	1139
0400	0358	34011	104 B	2706	14703	0598	01031	1036

-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 04XX	AIR T 08.8	VIS 1
ONS. NO 014	MONTH 6	MXSAMPD 04	WAVES 2 49X2	WET B 08.3	STN
AT 50-02 N	DAY 01	NO.DPTH 14	WND-DIR 040	WW-CODE 45	
ON 145-05 W	HR 19.4	W-COLOR 10	WND-SPD 02	CLD-TPE X	
ARSD SQ 195	C/I 1802	W-TRNSP 13	BARO 1011.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0000	075 B	32750	676 B	2560	14781
194	0010	0694 B	32731	733 B	2566	14760
194	0020	0687 B	32733	735 B	2567	14759
194	0030	0687	32740	735 B	2568	14761
194	0050	0605 B	32763	741 B	2580	14731
194	0075	0507	32777	740 B	2593	14696
194	0100	0466 B	32797	711 B	2599	14683
194	0125	0393	33162	626 B	2636	14661
194	0150	0377 B	33621	532 B	2674	14665
194	0175	0371	33637	454 B	2675	14667
194	0200	0362 B	33775	347 B	2687	14669
194	0250	0356	33829	244 B	2692	14675
194	0300	0356	34001	186 B	2706	14686
194	0400	0359	34024	106 B	2707	14704

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0750 B	32750	676 B	2560	14781	0000	00000	2394
0010	0694 B	32731	733 B	2566	14760	0024	00001	2337
0020	0687 B	32733	735 B	2567	14759	0047	00005	2328
0030	0687	32740	735 B	2568	14761	0071	00011	2324
0050	0605 B	32763	741 B	2580	14731	0116	00029	2208
0075	0507	32777	740 B	2593	14696	0170	00064	2090
0100	0466 B	32797	711 B	2599	14683	0222	00110	2033
0125	0393	33162	626 B	2636	14661	0269	00164	1688
0150	0377 B	33621	532 B	2674	14665	0307	00217	1329
0175	0371	33637	454 B	2675	14667	0340	00272	1313
0200	0362 B	33775	347 B	2687	14669	0372	00333	1202
0225	0358 B	3381 F	283 B	2691	14672	0402	00399	1171
0250	0356	33829	244 B	2692	14675	0431	00470	1160
0300	0356	34001	186 B	2706	14686	0487	00626	1034
0400	0359	34024	106 B	2707	14704	0591	01000	1028

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 0321	AIR T 10.5	VIS 7
CONS. NO 015	MONTH 6	MXSAMPD 20	WAVES 2 2721	WET B 08.8	STN
LAT 50-05 N	DAY 03	NO.DPTH 21	WND-DIR 030	WW-CODE 02	
LON 145-04 W	HR 18.9	W-COLOR 10	WND-SPD 07	CLD-TPE 8	
MARSD SQ 195	C/I 1802	W-TRNSP 09	BARO 1000.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	078 B	32770	694 B	2558	14792
189	0010	0728 B	32736	707 B	2562	14773
189	0020	0701 B	32737	712 B	2566	14764
189	0030	0693	32734	727 B	2567	14763
189	0050	0561 B	32745	713 B	2584	14713
189	0075	0508	32758	711 B	2591	14696
189	0100	0474 B	32768	698 B	2596	14686
189	0125	0410	33267	620 B	2642	14670
189	0150	0379 B	33609	530 B	2672	14666
189	0175	0378	33702	453 B	2680	14671
189	0200	0372 B	33758	346 B	2685	14673
189	0250	0355	33834	244 B	2693	14675
189	0300	0358	33905	175 B	2698	14685
189	0400	0360	34050	106 B	2709	14705
195	0500	0356 B	34154	092 B	2718	14721
195	0600	0340	34216	081 B	2724	14732
195	0800	0310	34312	078 B	2735	14753
195	1000	0285	34379	076 B	2743	14777
195	1200	0262	34444	069 B	2750	14801
195	1500	0230	34509	092 B	2758	14839
195	2000	0196	34582	140 B	2766	14910

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0780 B	32770	694 B	2558	14792	0000	00000	2420
0010	0728 B	32736	707 B	2562	14773	0024	00001	2377
0020	0701 B	32737	712 B	2566	14764	0048	00005	2343
0030	0693	32734	727 B	2567	14763	0071	00011	2336
0050	0561 B	32745	713 B	2584	14713	0117	00029	2171
0075	0508	32758	711 B	2591	14696	0171	00064	2105
0100	0474 B	32768	698 B	2596	14686	0223	00111	2063
0125	0410	33267	620 B	2642	14670	0269	00164	1625
0150	0379 B	33609	530 B	2672	14666	0307	00216	1340
0175	0378	33702	453 B	2680	14671	0340	00271	1271
0200	0372 B	33758	346 B	2685	14673	0371	00331	1225
0225	0363 B	33799	284 B	2689	14674	0402	00397	1187
0250	0355	33834	244 B	2693	14675	0431	00469	1155
0300	0358	33905	175 B	2698	14685	0488	00630	1108
0400	0360	34050	106 B	2709	14705	0595	01012	1009

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0356 B	34154	092 B	2718	14721	0693	01464	0935
0600	0340	34216	081 B	2724	14732	0785	01981	0879
0700	0325	34268	078 B	2730	14742	0871	02558	0831
0800	0310	34312	078 B	2735	14753	0953	03189	0790
1000	0285	34379	076 B	2743	14777	1107	04604	0726
1200	0262	34444	069 B	2750	14801	1248	06194	0665
1500	0230	34509	092 B	2758	14839	1440	08847	0597
2000	0196	34582	140 B	2766	14910	1725	13942	0525

C-REF-NO 004 YR 1964 DEPTH C 4206 WAVES 1 05X1 AIR T 10.5 VIS 7
 CONS. NO 016 MONTH 6 MXSAMPD 04 WAVES 2 49X1 WET B 08.8 STN
 LAT 50-02 N DAY 07 NO.DPTH 14 WND-DIR 050 WW-CODE 02
 LON 145-03 W HR 21.1 W-COLOR 20 WND-SPD 05 CLD-TPE 1
 MARSD SQ 195 C/I 1802 W-TRNSP 09 BARO 1022.0 CLD-AMT 2 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
211	0000	081 B	32777	673 B	2554	14804
211	0010	0726 B	32790	726 B	2567	14773
211	0020	0703 B	32801	725 B	2571	14766
211	0030	0700	32836	728 B	2574	14767
211	0050	0564 B	32828	730 B	2590	14716
211	0075	0502	32829	735 B	2598	14694
211	0100	0473 B	32788	697 B	2598	14686
211	0125	0440 B	33035	642 B	2621	14679
211	0150	0380 B	33577	525 B	2670	14666
211	0175	0376 B	33724	404 B	2682	14670
211	0200	0374 B	33780	318 B	2686	14674
211	0250	0367	33885	230 B	2696	14681
211	0300	0360	33971	170 B	2703	14687
211	0400	0360	34034	107 B	2708	14704

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0810 B	32777	673 B	2554	14804	0000	00000	2456
0010	0726 B	32790	726 B	2567	14773	0024	00001	2334
0020	0703 B	32801	725 B	2571	14766	0047	00005	2297
0030	0700	32836	728 B	2574	14767	0070	00011	2269
0050	0564 B	32828	730 B	2590	14716	0114	00029	2112
0075	0502	32829	735 B	2598	14694	0167	00062	2045
0100	0473 B	32788	697 B	2598	14686	0218	00108	2047
0125	0440 B	33035	642 B	2621	14679	0267	00164	1830
0150	0380 B	33577	525 B	2670	14666	0307	00220	1365
0175	0376 B	33724	404 B	2682	14670	0340	00275	1252
0200	0374 B	33780	318 B	2686	14674	0371	00335	1210
0225	0371 B	33834	265 B	2691	14677	0401	00400	1168
0250	0367	33885	230 B	2696	14681	0430	00471	1128
0300	0360	33971	170 B	2703	14687	0486	00626	1061
0400	0360	34034	107 B	2708	14704	0591	01003	1021

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 49XX	AIR T 09.9	VIS 1
CONS. NO 017	MONTH 6	MXSAMPD 42	WAVES 2 49XX	WET B 09.9	STN
LAT 50-02 N	DAY 10	NO.DPTH 26	WND-DIR 990	WW-CODE 45	
LON 144-56 W	HR 19.1	W-COLOR 20	WND-SPD 01	CLD-TPE X	
MARSD SQ 195	C/I 1802	W-TRNSP 09	BARO 1017.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	089 B	32755	662 B	2540	14834
191	0010	0795	32726	719 B	2552	14799
191	0020	0752 B	32727	721 B	2558	14784
191	0030	0748	32729	722 B	2559	14784
191	0050	0717 B	32733	725 B	2563	14776
191	0075	0551	32750	730 B	2586	14713
191	0100	0506 B	32750	711 B	2591	14699
191	0125	0476	32825	707 B	2600	14692
191	0150	0419 B	33275	593 B	2642	14678
191	0175	0387 B	33565	475 B	2668	14673
191	0200	0379 B	33672	372 B	2677	14675
191	0250	0373	33784	269 B	2687	14682
191	0300	0368	33863	Q 256 B	2694	14689
191	0400	0370	34009	147 B	2705	14708
191	0500	0358	34115	102 B	2715	14721
191	0600	0348	34195	095 B	2722	14735
205	0800	0315	34308	079 B	2734	14755
205	1000	0285	34392	075 B	2744	14777
205	1200	0258 B	34443	071 B	2750	14799
205	1500	0228 B	34513	076 B	2758	14838
205	2000	0194 B	34578	137	2766	14909
205	2500	0170	34623	204	2771	14985
205	3000	0156	34650	276	2775	15065
205	3500	0154	34667	304	2776	15152
205	4000	0155	34674	318	2777	15240
205	4200	0153	34679	333	2777	15275

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0890 B	32755	662 B	2540	14834	0000	00000	2587
0010	0795	32726	719 B	2552	14799	0025	00001	2474
0020	0752 B	32727	721 B	2558	14784	0050	00005	2417
0030	0748	32729	722 B	2559	14784	0074	00011	2411
0050	0717 B	32733	725 B	2563	14776	0122	00031	2370
0075	0551	32750	730 B	2586	14713	0179	00067	2158
0100	0506 B	32750	711 B	2591	14699	0233	00115	2111
0125	0476	32825	707 B	2600	14692	0285	00175	2025
0150	0419 B	33275	593 B	2642	14678	0331	00240	1630
0175	0387 B	33565	475 B	2668	14672	0369	00302	1383

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	0379 B	33672	372 B	2677	14675	0403	00367	1296
0225	0375 B	3374 B	306 B	2683	14678	0435	00437	1244
0250	0373	33784	269 B	2687	14682	0466	00512	1210
0300	0368	33863	256 B	2694	14689	0525	00680	1150
0400	0370	34009	147 B	2705	14708	0636	01077	1050
0500	0358	34115	102 B	2715	14721	0738	01545	0966
0600	0348	34195	095 B	2722	14735	0833	02078	0904
0700	0332	34257	086 B	2728	14745	0921	02668	0848
0800	0315	34308	079 B	2734	14755	1004	03309	0799
1000	0285	34392	075 B	2744	14777	1158	04721	0717
1200	0258 B	34443	071 B	2750	14800	1297	06296	0661
1500	0228 B	34513	076 B	2758	14838	1488	08930	0591
2000	0194 B	34578	137	2766	14909	1772	14007	0525
2500	0170	34623	204	2771	14985	2028	19928	0481
3000	0156	34650	276	2775	15065	2267	26723	0458
3500	0154	34667	304	2776	15152	2501	34597	0457
4000	0155	34674	318	2777	15241	2739	43818	0468

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 2521	AIR T 08.8	VIS 7
CONS. NO 018	MONTH 6	MXSAMPD 04	WAVES 2 2521	WET B 08.3	STN
LAT 50-06 N	DAY 15	NO.DPTH 14	WND-DIR 250	WW-CODE 02	
LON 144-55 W	HR 19.4	W-COLOR 20	WND-SPD 07	CLD-TPE 7	
MARSD SQ 195	C/I 1802	W-TRNSP 10	BARO 1003.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0000	082 B	32716	683 B	2547	14807
194	0010	0779 B	32681	715 B	2551	14793
194	0020	0762 B	32681	720 B	2553	14788
194	0030	0666	32715	719 B	2569	14752
194	0049	0555 B	32742	722 B	2585	14711
194	0074	0512	32747	721 B	2590	14697
194	0099	0472 B	32796	712 B	2598	14685
194	0123	0416	33236	712 B	2639	14672
194	0148	0379 B	33576	572 B	2670	14665
194	0172	0373	33634	468 B	2675	14667
194	0197	0368 B	33694	353 B	2680	14670
194	0246	0370	33771	256 B	2686	14680
194	0296	0364	33858	Q236 B	2694	14687
194	0396	0364	33981	132 B	2703	14705

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0820 B	32716	683 B	2547	14807	0000	00000	2515
0010	0779 B	32681	715 B	2551	14793	0025	00001	2486
0020	0762 B	32681	720 B	2553	14788	0050	00005	2464
0030	0666	32715	719 B	2569	14752	0074	00011	2316
0050	0552 B	32742	722 B	2585	14710	0119	00030	2163
0075	0511	32745	721 B	2590	14697	0173	00064	2118
0100	0470 B	32812	713 B	2600	14685	0225	00111	2026
0125	0412	33271	703 B	2642	14671	0271	00163	1625
0150	0378 B	33586	563 B	2671	14665	0309	00216	1356
0175	0372	33642	453 B	2676	14667	0342	00272	1311
0200	0368 B	33699	344 B	2681	14670	0375	00334	1265
0225	0369	33741	282 B	2684	14675	0406	00403	1236
0250	0370	33778	253 B	2687	14680	0437	00478	1211
0300	0367	3386 B	206 F	2693	14689	0497	00646	1153
0400	0364	33986	130 B	2704	14705	0609	01045	1061

C-REF-NO 004	YR 1961	DEPTH C 4206	WAVES 1 49XX	AIR T 09.9	VIS 2
COMS. NO 019	MONTH 6	MASAMPC 20	WAVES 2 2721	WET B 09.9	STN
LAT 50-03 N	DAY 19	NO.DPTH 21	WND-DIR 030	WW-CODE 45	
LON 145-00 W	HR 18.9	W-COLOR 40	WND-SPD 01	CLD-TPE X	
MARSD SQ 195	E/I 1802	W-TRNSP 08	BARO 1017.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	087 B	32355	625 B	2512	14822
189	0010	0800	32697	613 B	2549	14801
189	0020	0782 B	32696	640 B	2551	14796
189	0030	0732 B	32721	695 B	2560	14778
189	0049	0574 B	32750	696 B	2583	14719
189	0074	0516	32759	693 B	2591	14699
189	0099	0474 B	32781	700 B	2597	14686
189	0124	0438	33206	684 B	2634	14681
189	0149	0383 B	33608	555 B	2672	14667
189	0174	0380	33690	427 B	2679	14671
189	0199	0376 B	33749	338 B	2684	14674
189	0249	0367	33827	228 B	2691	14680
189	0299	0370	33913	Q210 B	2697	14690
189	0399	0368	34031	104 B	2707	14708
195	0500	0357 B	34124	089 B	2715	14721
195	0600	0344 B	34203	079 B	2723	14733
195	0800	0309	34319	063 B	2736	14753
195	1000	0282 B	34382	072 B	2743	14776
195	1200	0257	34444	074 B	2750	14799
195	1500	0230	34503	130 B	2757	14839
195	2000	0196	34573	202 B	2765	14910

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0870 B	32355	625 B	2512	14822	0000	00000	2855
0010	0800	32697	613 B	2549	14801	0027	00001	2503
0020	0782 B	32696	640 B	2551	14796	0052	00005	2480
0030	0732 B	32721	695 B	2560	14778	0077	00011	2396
0050	0570 B	32751	696 B	2584	14717	0123	00030	2177
0075	0514	32756	693 B	2591	14698	0177	00065	2113
0100	0473 B	32794	701 B	2598	14686	0229	00111	2042
0125	0435	33225	680 B	2636	14680	0276	00165	1682
0150	0382 B	33615	549 B	2673	14667	0314	00218	1339
0175	0380	33693	423 B	2679	14671	0347	00273	1280
0200	0376 B	33751	335 B	2684	14674	0378	00334	1234
0225	0371	33792	269 B	2688	14677	0409	00401	1200
0250	0367	33829	227 B	2691	14680	0439	00474	1171
0300	0370	33914	209 B	2698	14691	0497	00636	1113
0400	0368	34032	104 B	2707	14708	0605	01023	1031

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0357 B	34124	089 B	2715	14721	0705	01485	0958
0600	0344 B	34203	079 B	2723	14733	0799	02013	0893
0700	0327 B	34268	069 B	2730	14743	0886	02595	0834
0800	0309	34319	063 B	2736	14753	0968	03225	0784
1000	0282 B	34382	072 B	2743	14776	1120	04629	0721
1200	0257	34444	074 B	2750	14799	1260	06206	0659
1500	0230	34503	130 B	2757	14839	1452	08859	0601
2000	0196	34573	202 B	2765	14910	1739	14006	0531

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 2622	AIR T 09.4	VIS 7
CONS. NO 020	MONTH 6	MXSAMPD 04	WAVES 2 2923	WET B 08.8	STN
LAT 50-00 N	DAY 23	NO.DPTH 14	WND-DIR 260	WW-CODE 02	
LON 144-56 W	HR 19.6	W-COLOR 40	WND-SPD 05	CLD-TPE 6	
MARSD SQ 195	C/I 1802	W-TRNSP 09	BARO 1020.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	086 B	32814	616 B	2549	14824
196	0010	0836	32763	685 B	2549	14816
196	0020	0831 B	32778	686 B	2551	14815
196	0030	0820	32784	687 B	2553	14813
196	0050	0567 B	32793	706 B	2587	14716
196	0075	0491	32760	717 B	2593	14689
196	0100	0437 B	32957	675 B	2615	14673
196	0125	0406	33622	539 B	2671	14673
196	0150	0382 B	33676	452 B	2677	14668
196	0175	0381 B	33735	366 B	2682	14672
196	0200	0380 B	33811	Q 349 B	2688	14677
196	0250	0375	33897	237 B	2696	14684
196	0300	0372	33949	192 B	2700	14692
196	0400	0371	34010	141 B	2705	14709

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0860 B	32814	616 B	2549	14824	0000	00000	2499
0010	0836	32763	685 B	2549	14816	0025	00001	2504
0020	0831 B	32778	686 B	2551	14815	0050	00005	2488
0030	0820	32784	687 B	2553	14813	0075	00012	2469
0050	0567 B	32793	706 B	2587	14716	0122	00030	2142
0075	0491	32760	717 B	2593	14689	0175	00064	2085
0100	0437 B	32957	675 B	2615	14673	0225	00109	1883
0125	0406	33622	539 B	2671	14673	0266	00155	1355
0150	0382 B	33676	452 B	2677	14668	0299	00202	1292
0175	0381 B	33735	366 B	2682	14672	0331	00255	1249
0200	0380 B	33811	349 B	2688	14677	0362	00314	1193
0225	0378 B	33862	295 C	2693	14681	0391	00379	1155
0250	0375	33897	237 B	2696	14684	0420	00449	1127
0300	0372	33949	192 B	2700	14692	0476	00607	1089
0400	0371	34010	141 B	2705	14709	0584	00994	1050

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 49XX	AIR T 12.2	VIS 7
CONS. NO 021	MONTH 6	MXSAMPD 42	WAVES 2 29X1	WET B 09.9	STN
LAT 49-57 N	DAY 24	NO.DPTH 26	WND-DIR 250	WW-CODE 02	
LON 144-49 W	HR 18.9	W-COLOR 40	WND-SPD 02	CLD-TPE 6	
MARSD SQ 159	C/I 1802	W-TRNSP 09	BARO 1024.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	092 B	32745	642 B	2534	14845
189	0010	0857 B	32690	664 B	2540	14823
189	0020	0831 B	32694	691 B	2544	14814
189	0030	0828	32691	702 B	2544	14815
189	0050	0658 B	32734	702 B	2571	14752
189	0075	0521	32744	705 B	2589	14701
189	0100	0486 B	32749	693 B	2593	14691
189	0125	0454	32878	554 B	2607	14683
189	0150	0391 B	33506	453 B	2663	14669
189	0175	0382	33629	381 B	2674	14671
189	0200	0382 B	33690	Q 350 B	2679	14676
189	0250	0375	33786	243 B	2687	14683
189	0300	0370	33859	197 B	2693	14690
189	0400	0371	33992	142 B	2704	14709
189	0500	0363	34103	106 B	2713	14723
189	0600	0348	34182	082 B	2721	14734
199	0800	0317	34293	072 B	2733	14756
199	1000	0289	34373	066 B	2742	14778
199	1200	0264	34421	070 B	2748	14802
199	1500	0228 B	34486	077 B	2756	14838
199	2000	0192	34573	Q 181	2766	14908
199	2500	0172	34613	197	2771	14985
199	3000	0156	34648	242	2774	15065
199	3500	0153	34658	299	2776	15151
199	4000	0154	34669	314	2776	15240
199	4200	0154	34672	330	2777	15275

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0920 B	32745	642 B	2534	14845	0000	00000	2639
0010	0857 B	32690	664 B	2540	14823	0026	00001	2589
0020	0831 B	32694	691 B	2544	14814	0052	00005	2550
0030	0828	32691	702 B	2544	14815	0078	00012	2550
0050	0658 B	32734	702 B	2571	14752	0127	00032	2294
0075	0521	32744	705 B	2589	14701	0182	00067	2130
0100	0486 B	32749	693 B	2593	14691	0235	00115	2090
0125	0454	32878	554 B	2607	14683	0286	00173	1962
0150	0391 B	33506	453 B	2663	14669	0329	00233	1429
0175	0382	33629	381 B	2674	14671	0364	00291	1330

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	0382 B	33690	350 B	2679	14676	0397	00354	1286
0225	0379 B	33742	296 B	2683	14680	0429	00423	1246
0250	0375	33786	243 B	2687	14683	0460	00499	1211
0300	0370	33859	197 B	2693	14690	0519	00667	1155
0400	0371	33992	142 B	2704	14709	0631	01067	1064
0500	0363	34103	106 B	2713	14723	0734	01542	0980
0600	0348	34182	082 B	2721	14734	0830	02081	0913
0700	0332	34243	074 B	2727	14745	0920	02678	0858
0800	0317	34293	072 B	2733	14756	1004	03328	0812
1000	0289	34373	066 B	2742	14778	1161	04771	0735
1200	0264	34421	070 B	2748	14802	1304	06394	0684
1500	0228 B	34486	077 B	2756	14838	1501	09117	0611
2000	0192	34573	181	2766	14908	1790	14278	0527
2500	0172	34613	197	2771	14985	2049	20271	0490
3000	0156	34648	242	2774	15065	2292	27141	0459
3500	0153	34658	299	2776	15151	2528	35072	0462
4000	0154	34669	314	2776	15240	2766	44359	0470

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 27X1	AIR T 08.3	VIS 7
CONS. NO 022	MONTH 6	MXSAMPD 04	WAVES 2 27X1	WET B 07.2	STN
LAT 50-01 N	DAY 25	NO.DPTH 14	WND-DIR 270	WW-CODE 02	
LON 144-52 W	HR 20.2	W-COLOR 40	WND-SPD 03	CLD-TPE 8	
MARSD SQ 195	C/I 1802	W-TRNSP 09	BARO 1026.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
202	0000	093 B	32733	654 B	2532	14849
202	0010	0863	32706	684 B	2540	14825
202	0020	0858 B	32711	694 B	2541	14825
202	0030	0832	32706	721 B	2545	14817
202	0050	0584 B	32765	730 B	2583	14723
202	0075	0496	32769	715 B	2594	14691
202	0100	0473 B	32807	703 B	2599	14686
202	0125	0392	33392	551 B	2654	14664
202	0150	0380 B	33633	449 B	2674	14666
202	0175	0380 B	33689	378 B	2679	14671
202	0200	0380 B	33751	Q 352 B	2684	14676
202	0250	0375	33828	219 B	2690	14683
202	0300	0371	33938	171 B	2699	14691
202	0400	0370	34039	138 B	2707	14709

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0930 B	32733	654 B	2532	14849	0000	00000	2663
0010	0863	32706	684 B	2540	14825	0026	00001	2585
0020	0858 B	32711	694 B	2541	14825	0052	00005	2576
0030	0832	32706	721 B	2545	14817	0078	00012	2544
0050	0584 B	32765	730 B	2583	14723	0126	00031	2182
0075	0496	32769	715 B	2594	14691	0179	00065	2084
0100	0473 B	32807	703 B	2599	14686	0231	00112	2033
0125	0392	33392	551 B	2654	14664	0276	00162	1514
0150	0380 B	33633	449 B	2674	14666	0312	00213	1323
0175	0380 B	33689	378 B	2679	14671	0344	00267	1283
0200	0380 B	33751	352 B	2684	14676	0376	00328	1238
0225	0378 B	3379 B	287 C	2687	14680	0407	00396	1208
0250	0375	33828	219 B	2690	14683	0437	00469	1179
0300	0371	33938	171 B	2699	14691	0494	00630	1097
0400	0370	34039	138 B	2707	14709	0602	01014	1028

C-REF-NO 004	YR 1964	DEPTH C 4206	WAVES 1 30XX	AIR T 08.8	VIS 6
CONS. NO 023	MONTH 6	MXSAMPD 04	WAVES 2 2921	WET B 07.7	STN
LAT 49-56 N	DAY 28	NO.DPTH 14	WND-DIR 300	WW-CODE 02	
LON 144-58 W	HR 19.8	W-COLOR 40	WND-SPD 02	CLD-TPE 7	
MARSD SQ 159	C/I 1802	W-TRNSP 09	BARO 1027.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	095 B	32771		2532	14857
198	0010	0924 B	32693		2530	14848
198	0020	0822 B	32718		2547	14811
198	0030	0812	32709		2548	14809
198	0050	0548 B	32761		2587	14708
198	0075	0498	32776		2594	14692
198	0100	0476 B	32789		2597	14687
198	0125	0439	32914		2611	14677
198	0150	0384 B	33533		2666	14667
198	0175	0378 B	33660		2677	14670
198	0200	0378 B	33739		2683	14675
198	0250	0372	33821		2690	14682
198	0300	0371	33896		2696	14691
198	0400	0370	34036		2707	14709

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0950 B	32771		2532	14857	0000	00000	2665
0010	0924 B	32693		2530	14848	0027	00001	2685
0020	0822 B	32718		2547	14811	0053	00005	2520
0030	0812	32709		2548	14809	0078	00012	2514
0050	0548 B	32761		2587	14708	0125	00031	2144
0075	0498	32776		2594	14692	0178	00065	2081
0100	0476 B	32789		2597	14687	0230	00111	2050
0125	0439	32914		2611	14677	0280	00169	1920
0150	0384 B	33533		2666	14667	0322	00227	1402
0175	0378 B	33660		2677	14670	0356	00284	1302
0200	0378 B	33739		2683	14675	0388	00345	1245
0225	0375 B	3379 B		2687	14679	0419	00413	1208
0250	0372	33821		2690	14682	0449	00486	1181
0300	0371	33896		2696	14691	0508	00650	1128
0400	0370	34036		2707	14709	0617	01039	1030

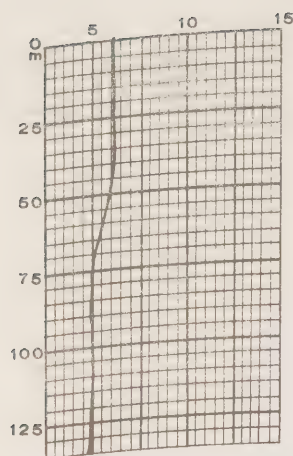
SECTION IV

Bathythermograms

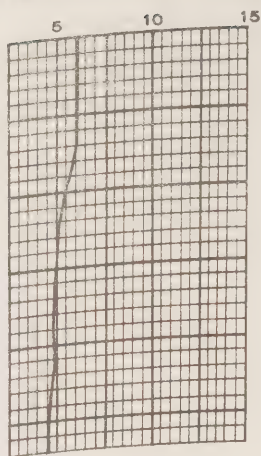
CCGS "ST. CATHARINES"

Daily Bathythermograms
and
OCEAN series bathythermograms

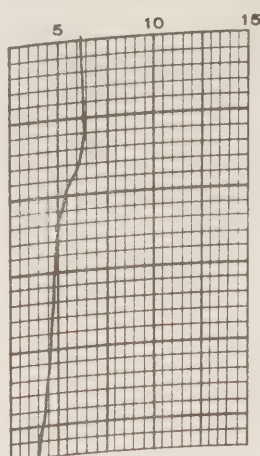
C.C.G.S. "St. Catharines", Survey P-64-2



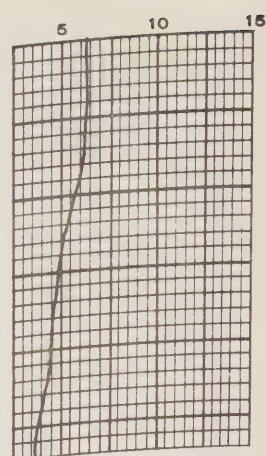
64-05-20-02.0
50°00'N
145°02'W



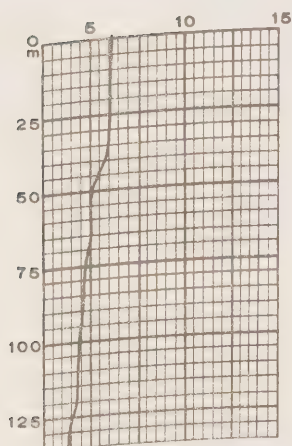
64-05-21-02.0
50°00'N
145°00'W



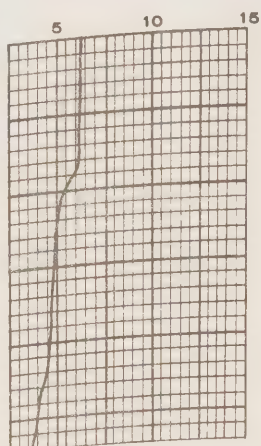
64-05-22-02.0
50°00'N
145°00'W



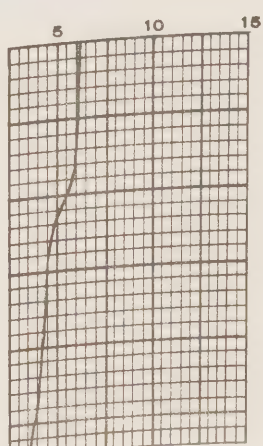
64-05-23-02.0
50°00'N
145°00'W



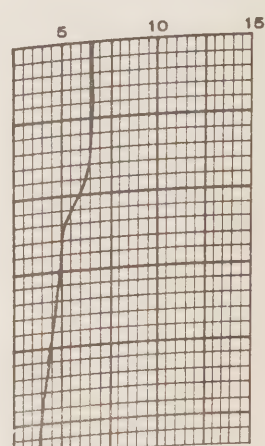
64-05-24-02.0
50°05'N
145°06'W



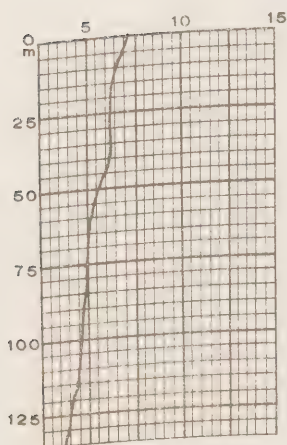
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50°00'N
145°03'W



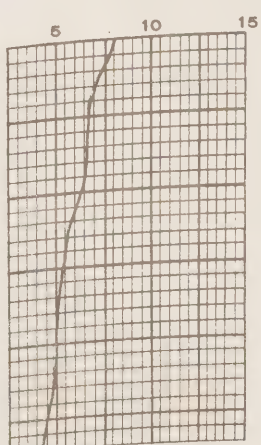
64-05-26-02.0
49°59'N
145°05'W



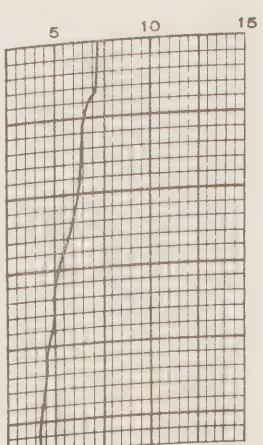
64-05-27-02.0
49°59'N
144°59'W



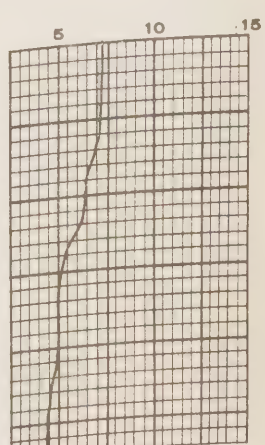
64-05-28-02.0
50°00'N
145°00'W



64-05-29-02.0
50°03'N
145°02'W

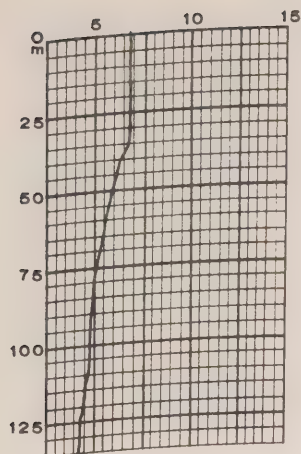


64-05-30-02.0
50°22'N
144°59'W

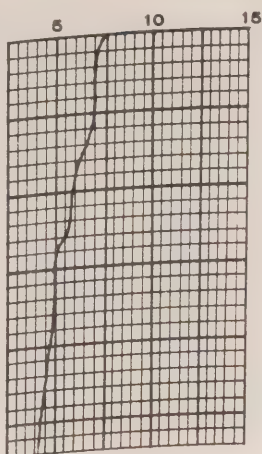


64-05-31-02.0
50°03'N
144°48'W

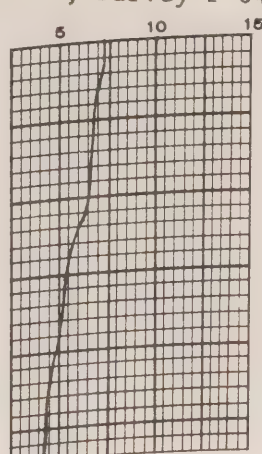
C.C.G.S. "St. Catharines", Survey P-64-2



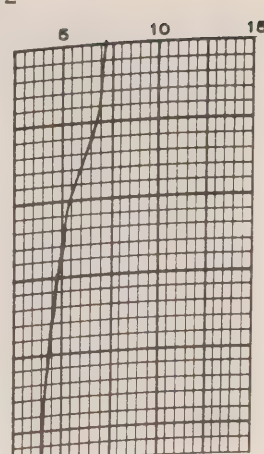
64-06-01-02.0
 $50^{\circ}05'N$
 $144^{\circ}51'W$



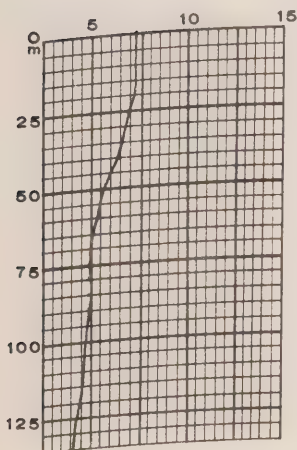
64-06-02-02.0
 $50^{\circ}05'N$
 $145^{\circ}08'W$



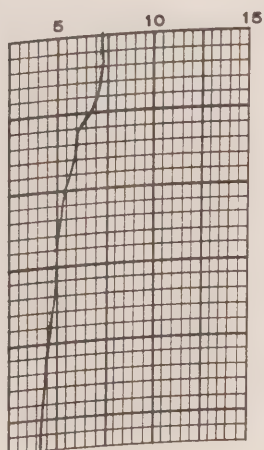
64-06-03-02.0
 $49^{\circ}57'N$
 $145^{\circ}00'W$



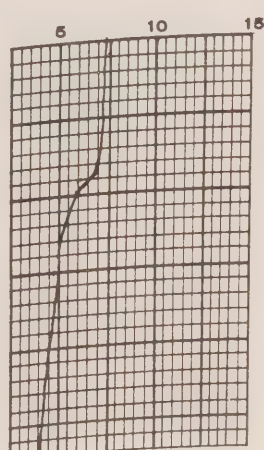
64-06-04-02.0
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 $145^{\circ}06'W$



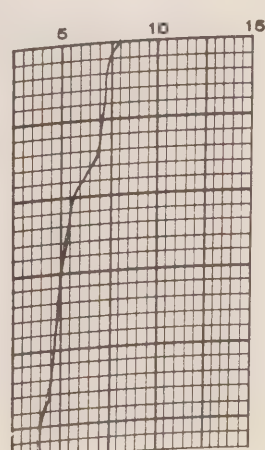
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 $50^{\circ}02'N$
 $145^{\circ}05'W$



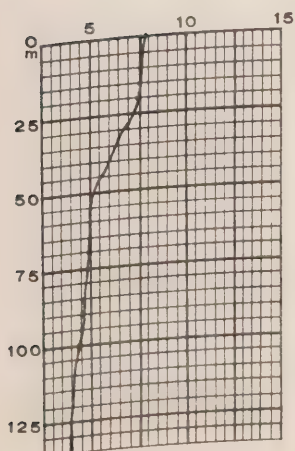
64-06-06-02.0
 $49^{\circ}57'N$
 $145^{\circ}00'W$



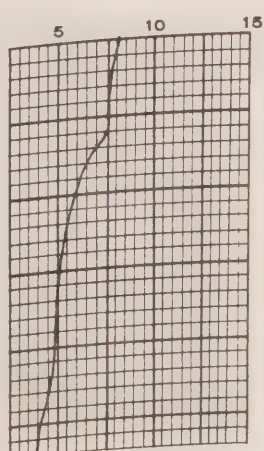
64-06-07-02.0
 $49^{\circ}54'N$
 $144^{\circ}57'W$



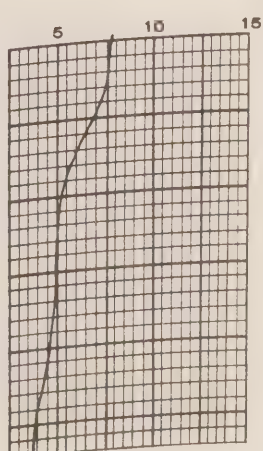
64-06-08-02.0
 $50^{\circ}02'N$
 $145^{\circ}01'W$



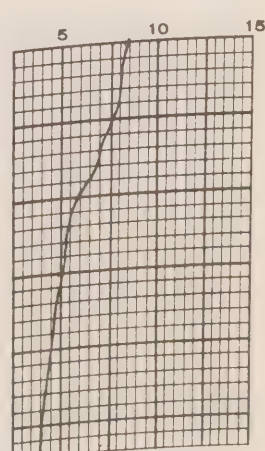
64-06-09-02.0
 $50^{\circ}01'N$
 $145^{\circ}01'W$



64-06-10-02.0
 $50^{\circ}07'N$
 $144^{\circ}52'W$

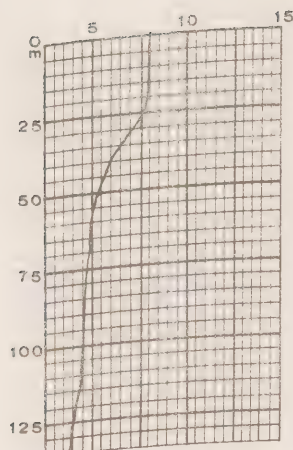


64-06-11-02.0
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 $145^{\circ}00'W$

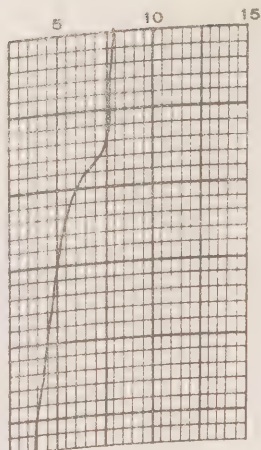


64-06-12-02.0
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 $145^{\circ}00'W$

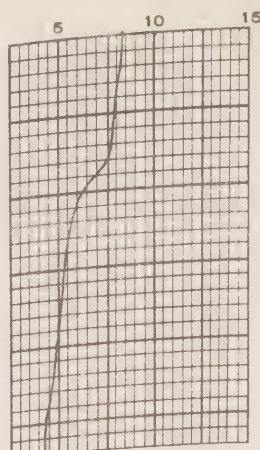
C.C.G.S. "St. Catharines", Survey P-64-2



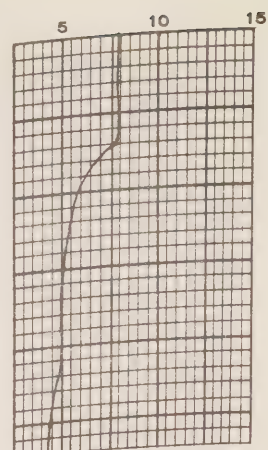
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50°02'N
144°54'W



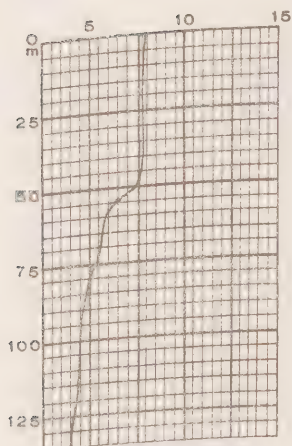
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49°57'N
145°00'W



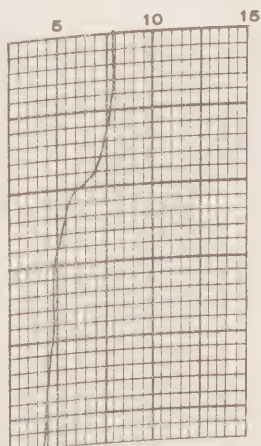
64-06-16-02.0
50°00'N
145°00'W



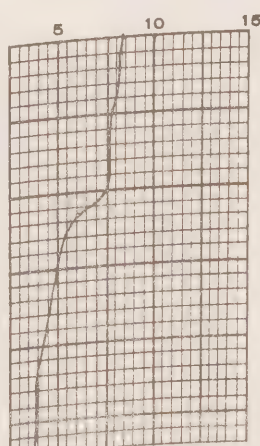
64-06-17-02.0
50°03'N
145°04'W



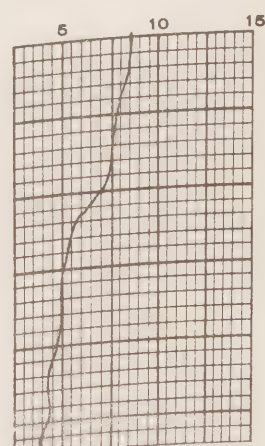
64-06-18-02.0
50°00'N
144°56'W



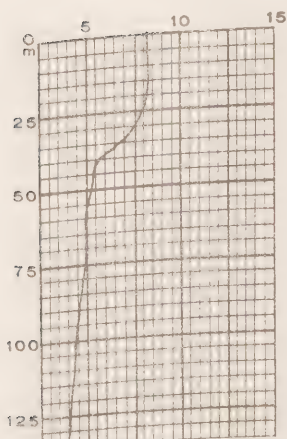
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50°00'N
144°58'W



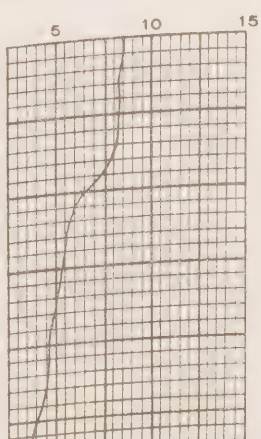
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49°59'N
144°59'W



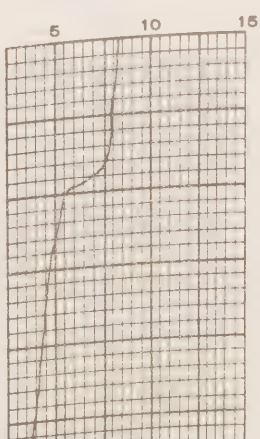
64-06-21-02.0
50°04'N
145°00'W



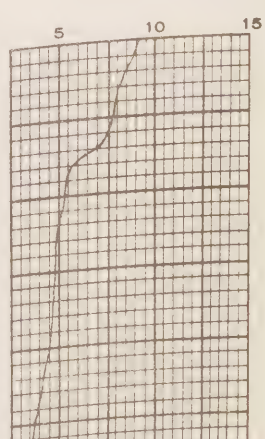
64-06-22-02.0
50°04'N
145°02'W



64-06-24-02.0
50°00'N
145°00'W

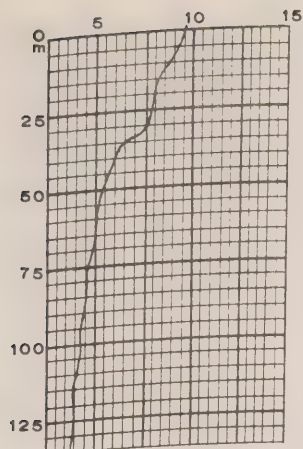


64-06-25-02.0
50°02'N
145°02'W



64-06-26-02.0
50°02'N
145°02'W

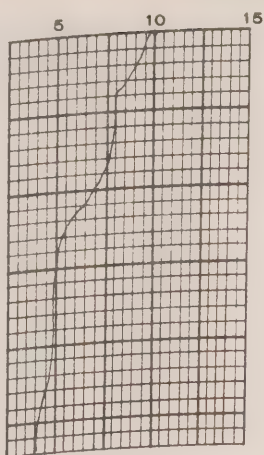
C.C.G.S. "St. Catharines", Survey P-64-2



64-06-27-02.0

50°00'N

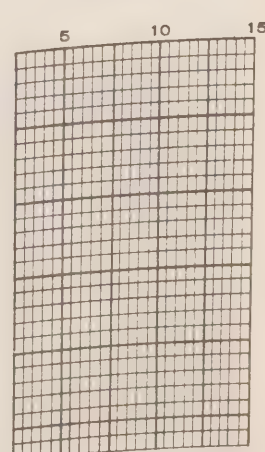
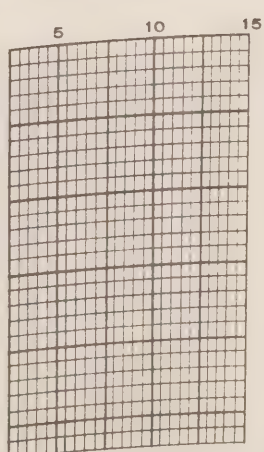
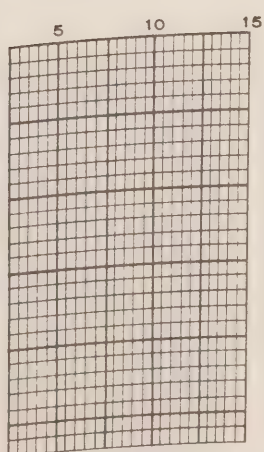
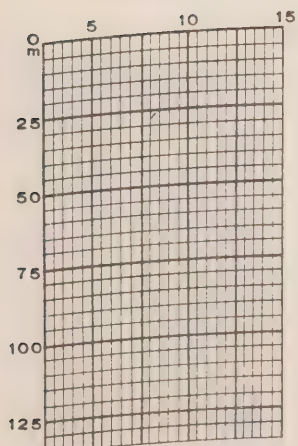
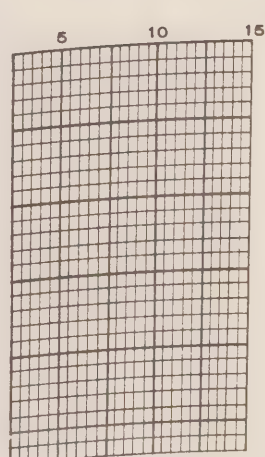
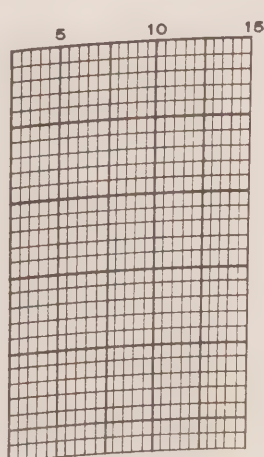
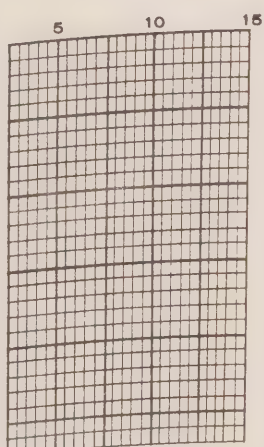
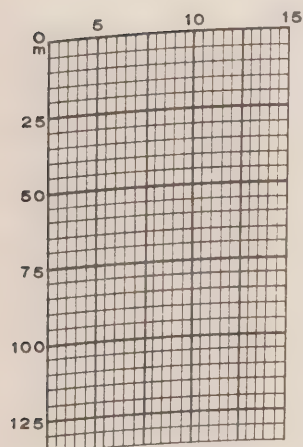
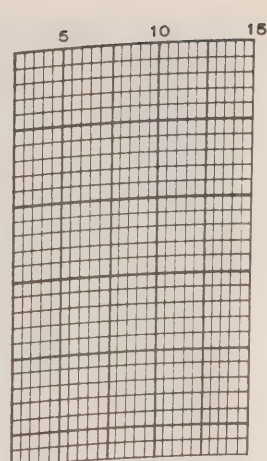
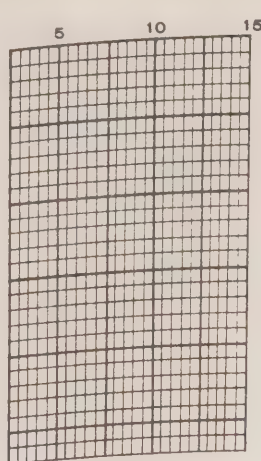
145°00'W



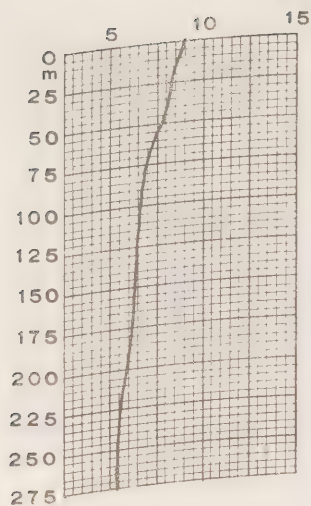
64-06-28-02.0

50°02'N

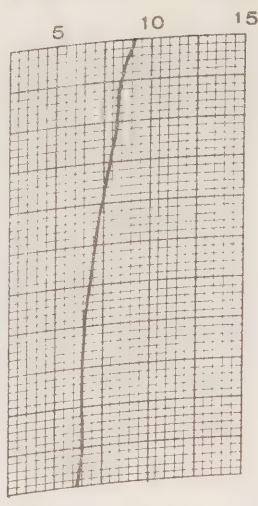
145°02'W



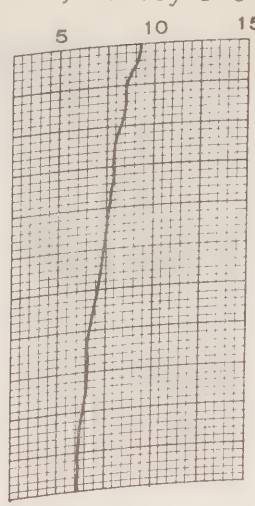
C.C.G.S. "St. Catharines", Survey P-64-2



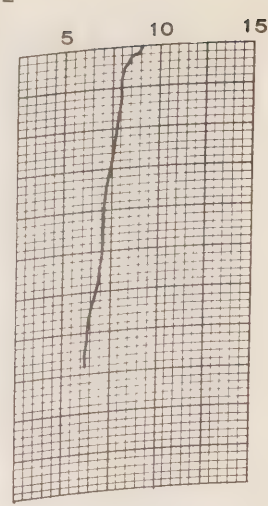
*64-05-16-03.2
48°42'N
126°40'W



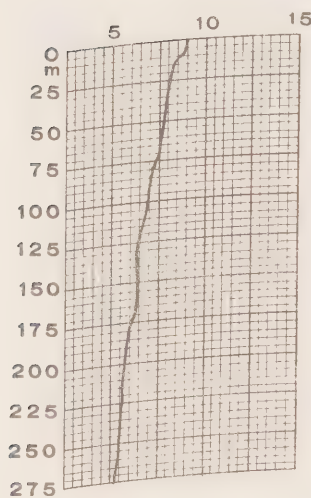
*64-05-16-08.3
48°46'N
127°40'W



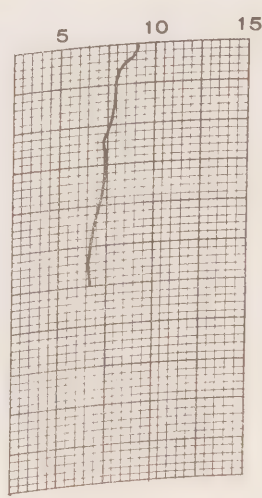
*64-05-16-12.8
48°51'N
128°40'W



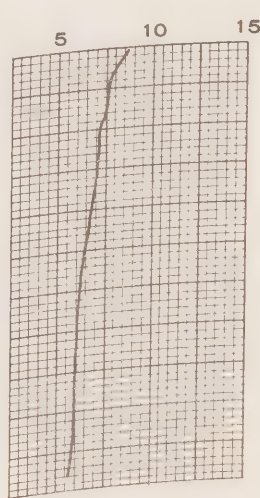
*64-05-16-16.1
48°55'N
129°40'W



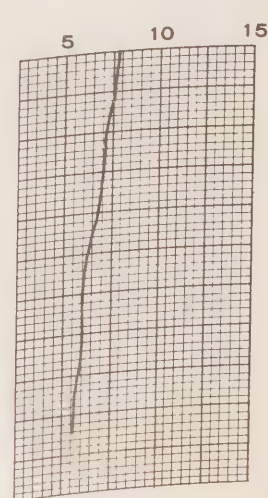
*64-05-16-19.9
49°02'N
130°40'W



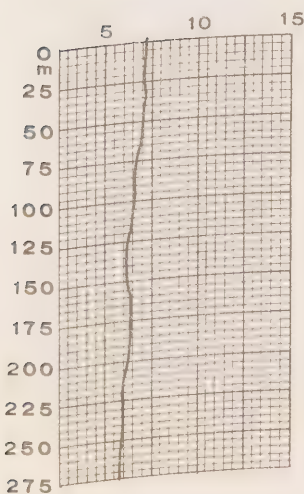
*64-05-16-23.4
49°05'N
131°40'W



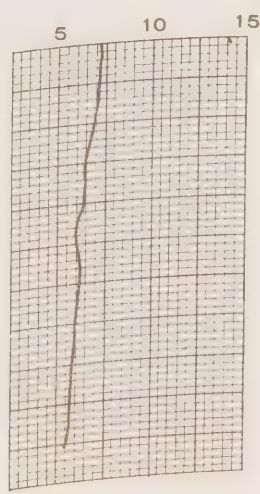
*64-05-17-03.9
49°10'N
132°40'W



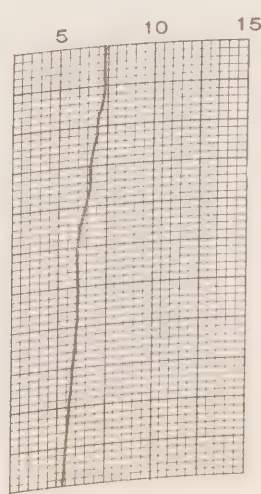
64-05-17-07.0
49°15'N
133°40'W



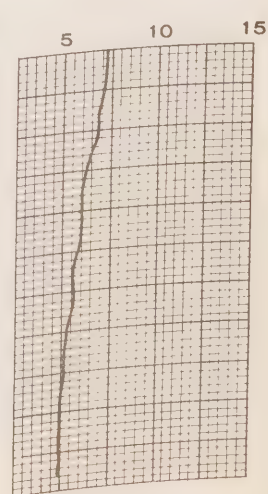
*64-05-17-10.8
49°20'N
134°40'W



*64-05-17-14.0
49°22'N
135°40'W

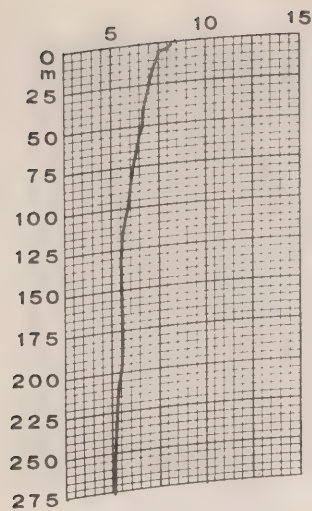


*64-05-17-18.0
49°26'N
136°40'W

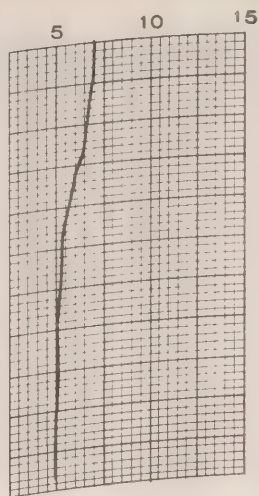


*64-05-17-21.8
49°30'N
137°40'W

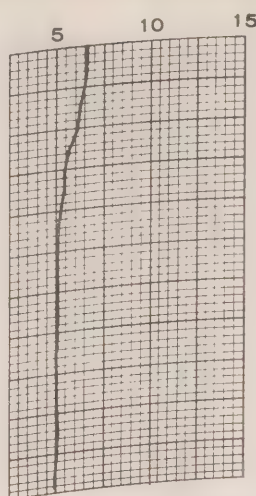
C.C.G.S. "St. Catharines", Survey P-64-2



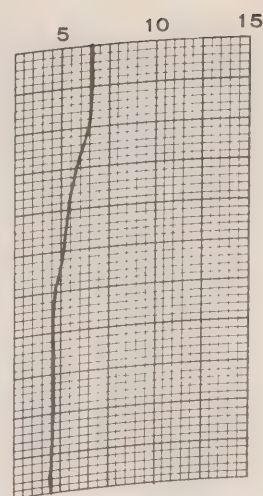
*64-05-18-02.0
49°35'N
138°40'W



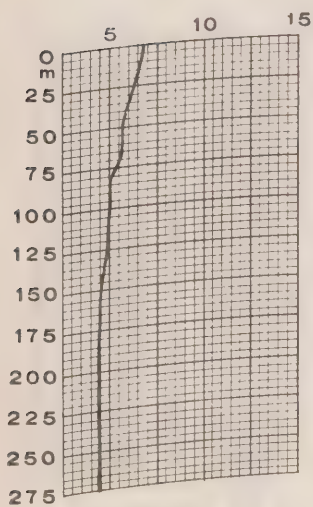
*64-05-18-05.3
49°37'N
139°40'W



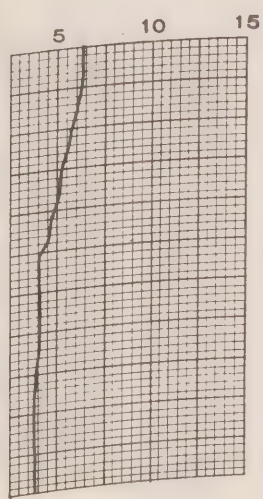
*64-05-18-09.2
49°41'N
140°40'W



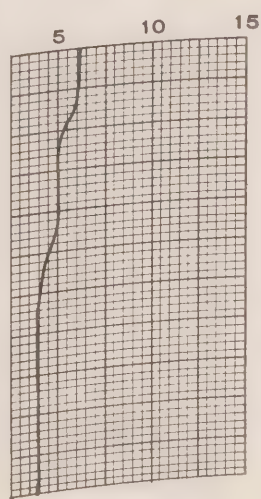
*64-05-18-12.8
49°45'N
141°40'W



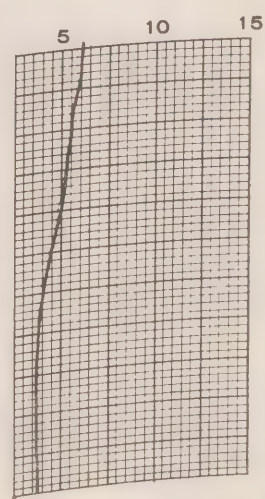
*64-05-18-20.0
49°49'N
142°40'W



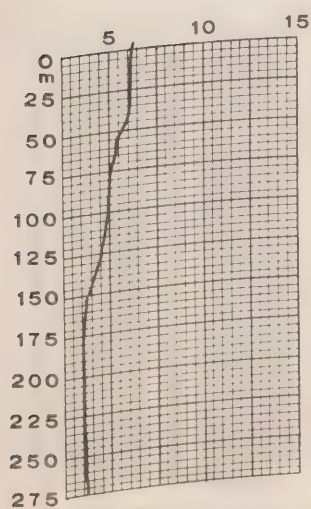
*64-05-19-00.9
49°54'N
143°40'W



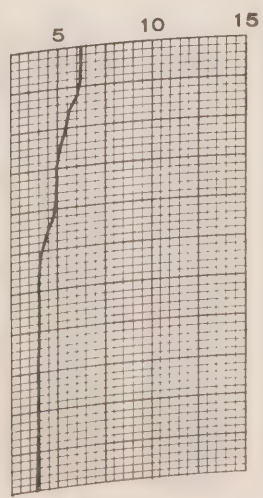
64-05-19-17.0
50°00'N
144°58'W



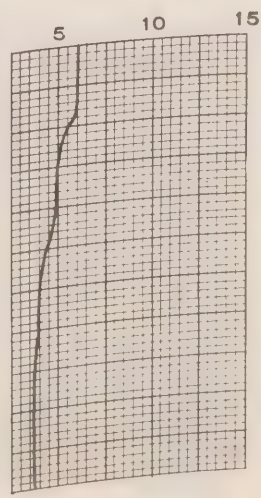
64-05-20-17.0
49°58'N
144°56'W



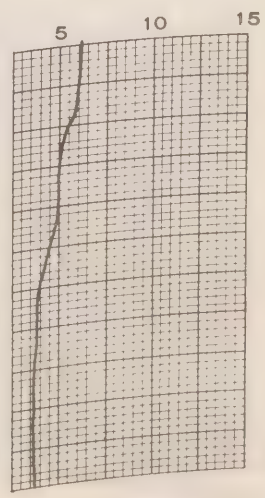
64-05-21-17.0
49°58'N
145°00'W



*64-05-21-19.1
49°57'N
144°58'W

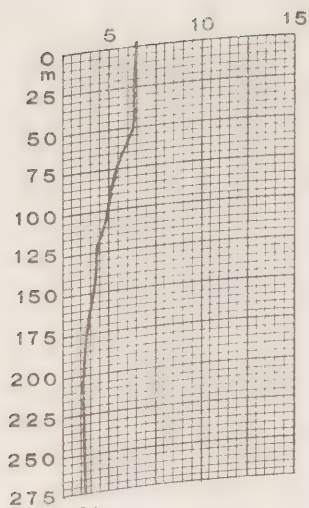


64-05-22-17.0
50°00'N
145°00'W

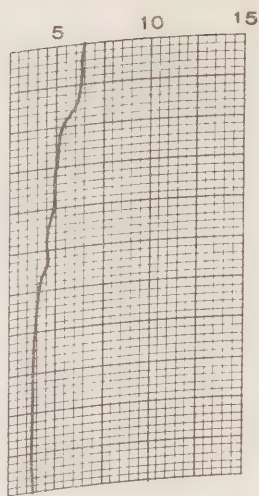


64-05-23-17.0
50°02'N
145°00'W

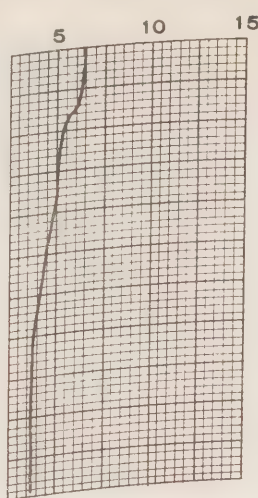
C.C.G.S. "St. Catharines", Survey P-64-2



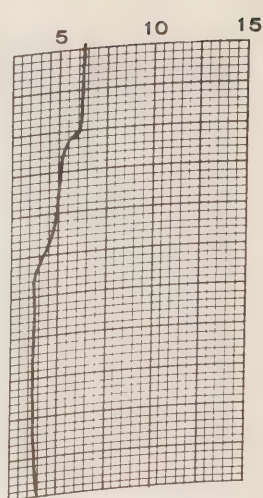
64-05-24-17.0
49°58'N
144°58'W



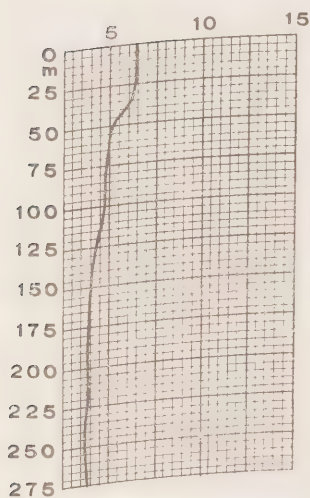
*64-05-24-19.5
49°59'N
144°52'W



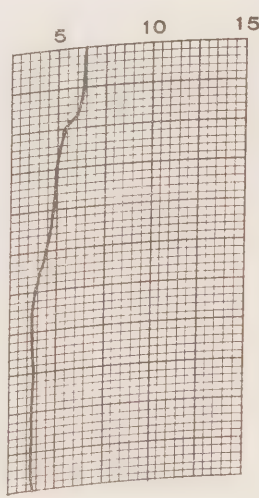
64-05-25-17.0
50°00'N
144°55'W



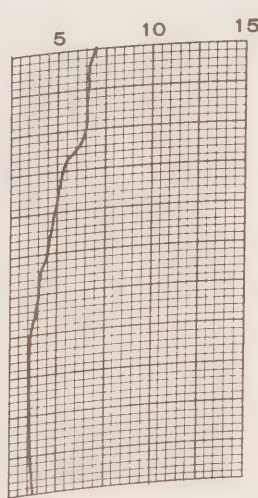
64-05-26-17.0
50°01'N
144°56'W



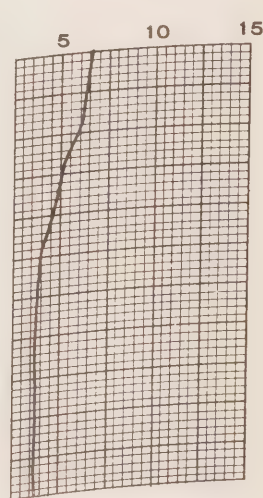
64-05-27-17.0
49°58'N
144°56'W



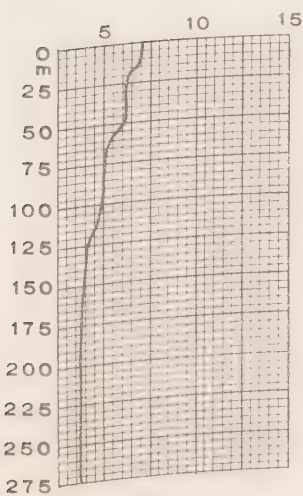
*64-05-27-18.1
49°58'N
144°54'W



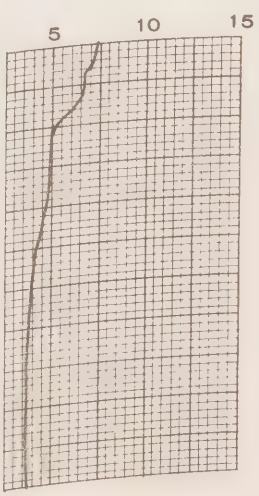
*64-05-27-19.8
49°56'N
144°52'W



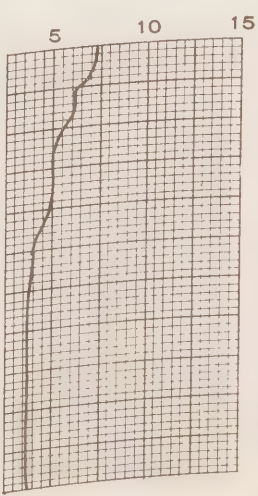
64-05-28-17.0
50°00'N
145°00'W



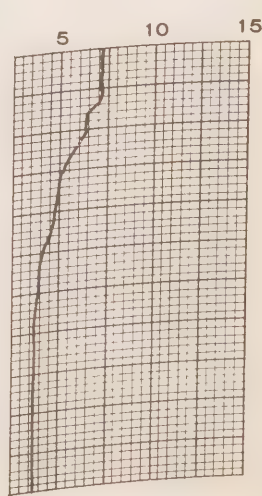
64-05-29-17.0
50°01'N
145°05'W



*64-05-29-20.0
50°02'N
145°02'W

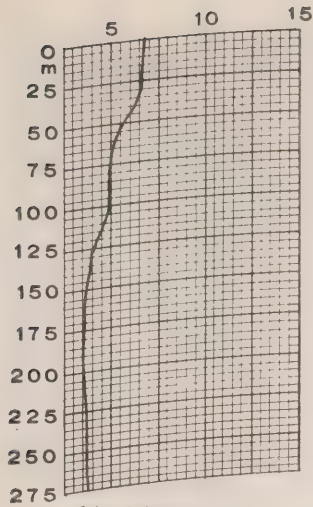


64-05-30-17.0
49°58'N
145°03'W

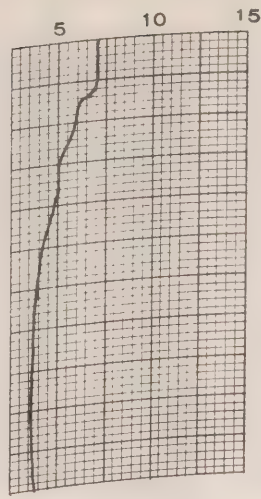


64-05-31-17.0
50°00'N
145°02'W

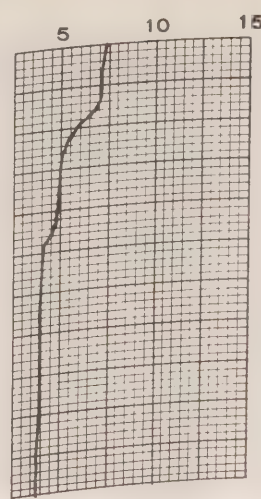
C.C.G.S. "St. Catharines", Survey P-64-2



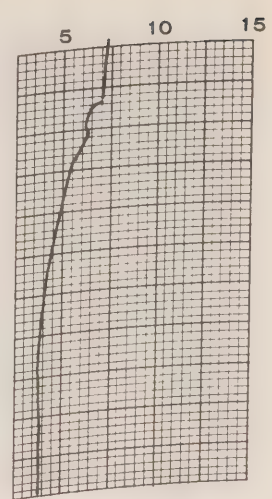
64-06-01-17.0
50°00'N
145°03'W



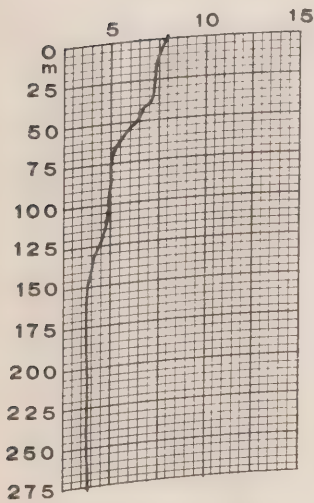
*64-06-01-19.8
50°02'N
145°05'W



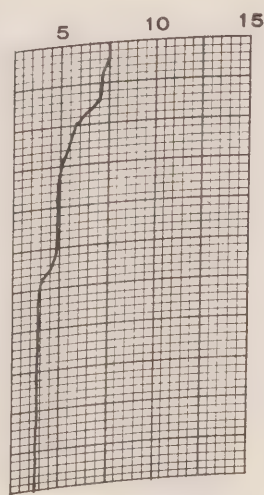
64-06-02-17.0
50°03'N
145°06'W



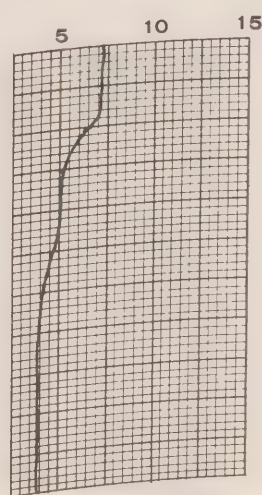
64-06-03-17.0
50°00'N
145°07'W



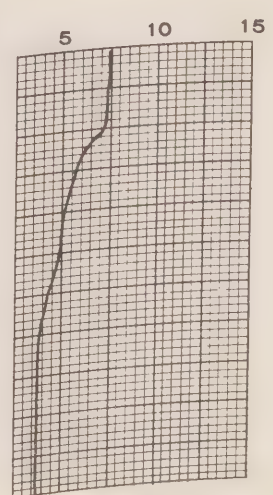
*64-06-03-19.7
50°04'N
145°05'W



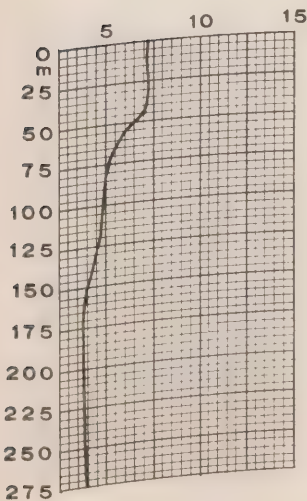
64-06-04-17.0
49°59'N
145°00'W



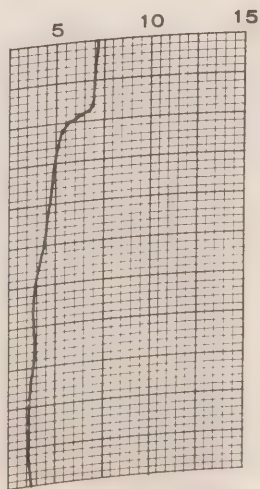
64-06-05-17.0
49°58'N
144°58'W



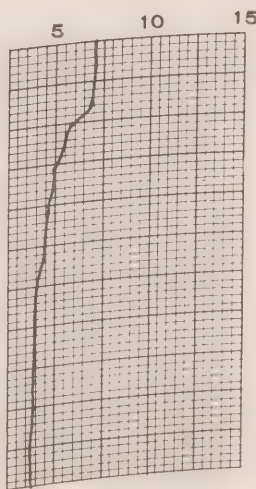
64-06-06-17.0
49°53'N
145°01'W



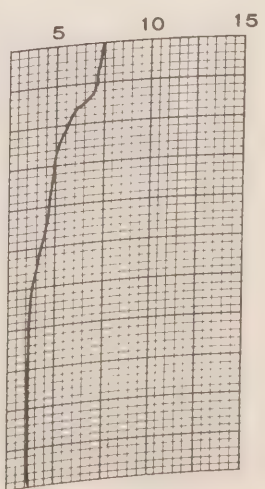
64-06-07-17.0
50°00'N
145°01'W



*64-06-07-21.6
50°02'N
145°03'W

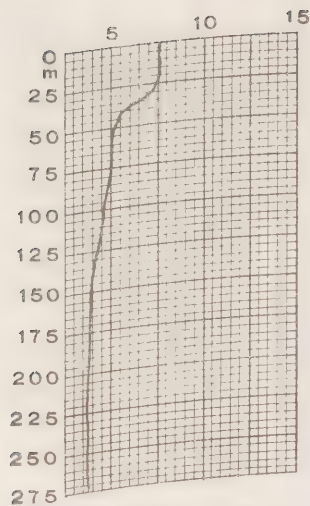


64-06-08-17.0
50°01'N
144°57'W

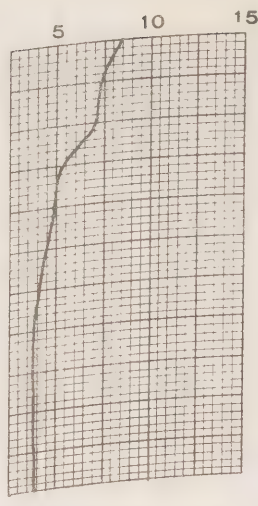


64-06-09-17.0
50°02'N
145°00'W

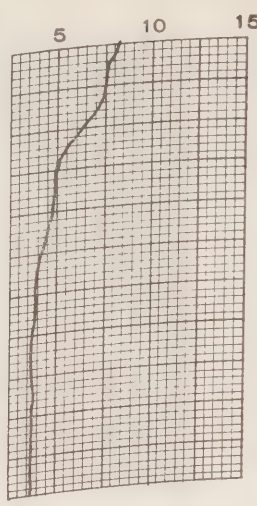
C.C.G.S. "St. Catharines", Survey P-64-2



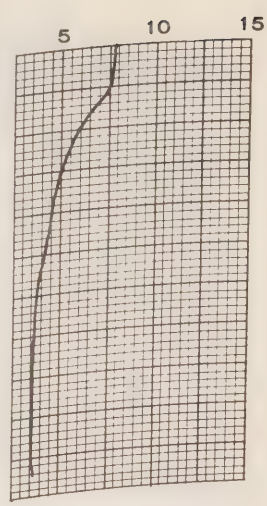
64-06-10-17.0
50°00'N
145°00'W



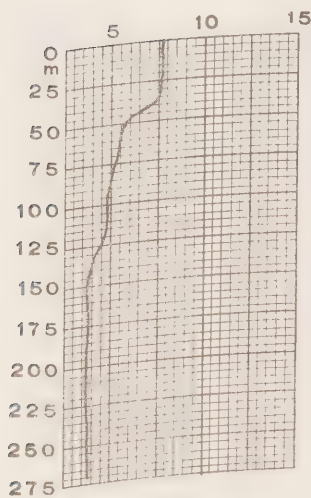
*64-06-10-20.6
50°02'N
144°46'W



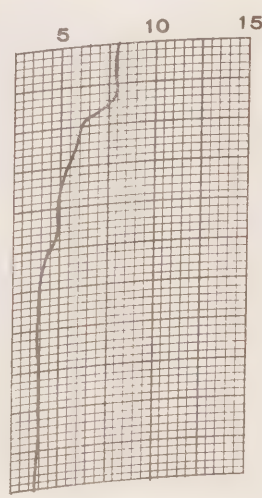
64-06-11-17.0
50°02'N
145°01'W



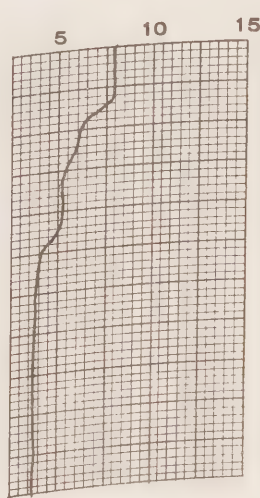
64-06-12-17.0
50°01'N
144°59'W



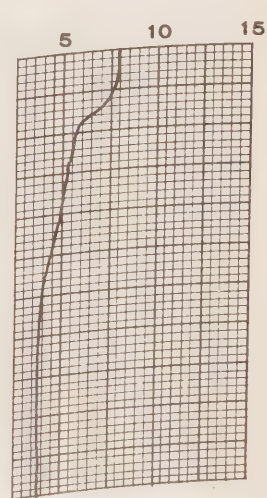
64-06-13-17.0
50°00'N
145°02'W



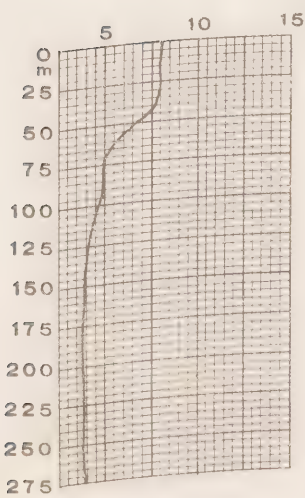
64-06-14-17.0
49°52'N
145°01'W



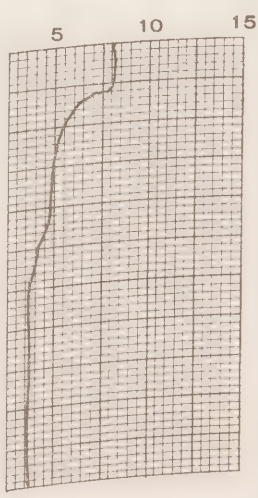
64-06-15-17.0
50°03'N
144°54'W



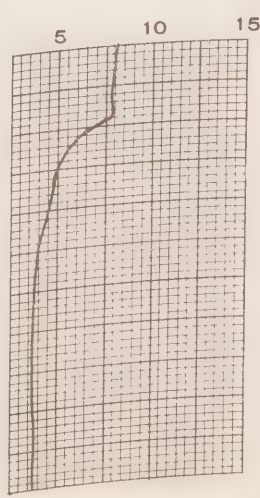
*64-06-15-19.8
50°06'N
144°55'W



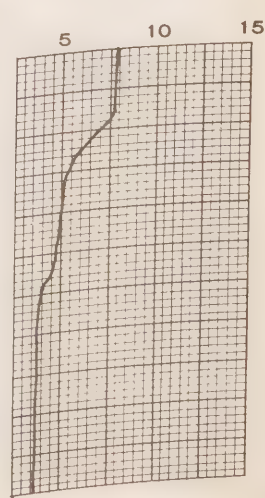
64-06-16-17.0
49°58'N
144°58'W



64-06-17-17.0
50°00'N
144°58'W

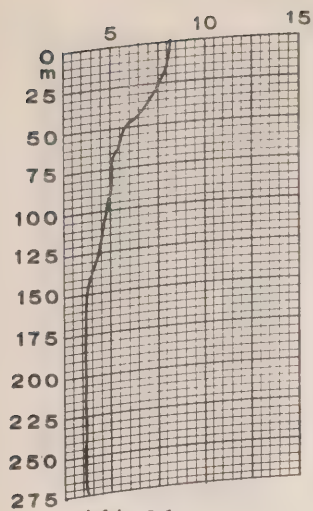


64-06-18-17.0
50°00'N
145°00'W

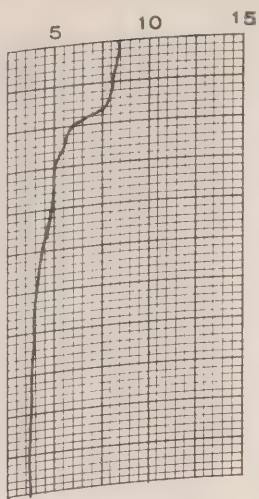


64-06-19-17.0
50°02'N
145°00'W

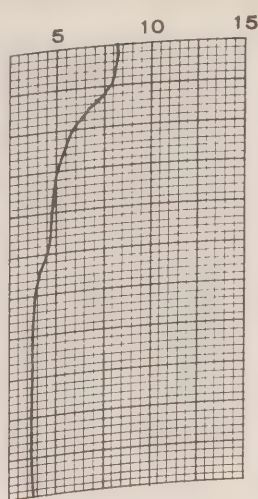
C.C.G.S. "St. Catharines", Survey P-64-2



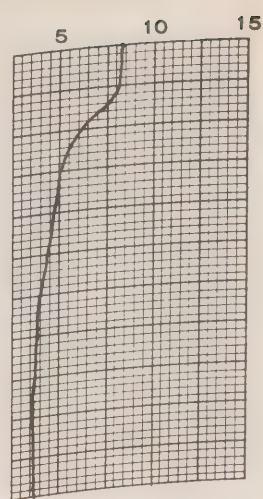
*64-06-19-19.5
50°03'N
145°00'W



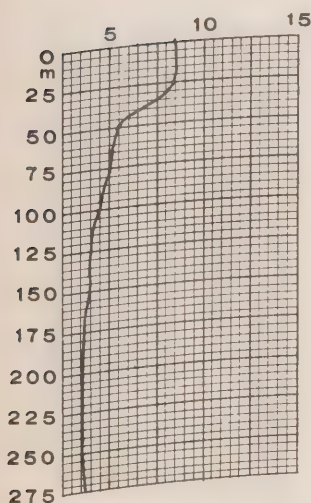
64-06-20-17.0
49°59'N
144°59'W



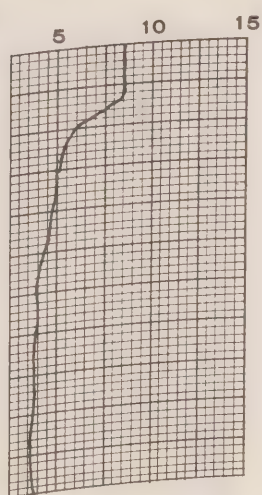
64-06-21-17.0
50°03'N
144°55'W



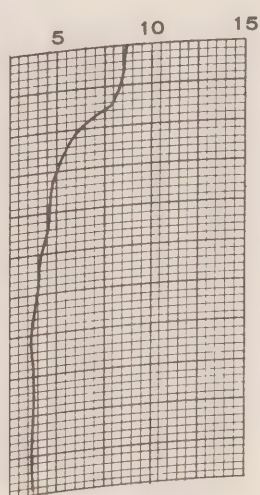
64-06-23-17.0
50°00'N
144°57'W



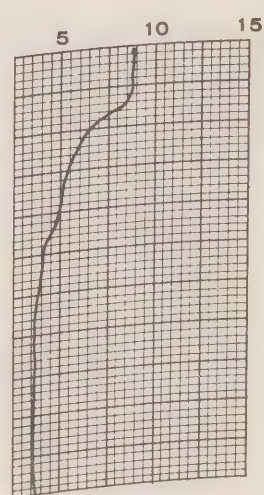
*64-06-23-19.4
50°00'N
144°56'W



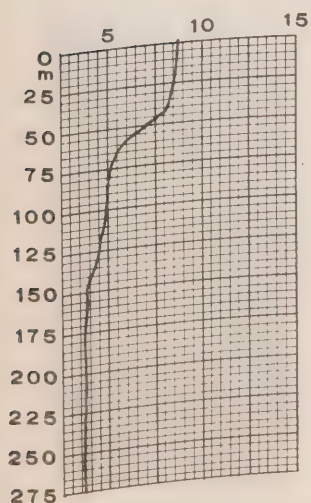
64-06-24-17.0
49°58'N
144°56'W



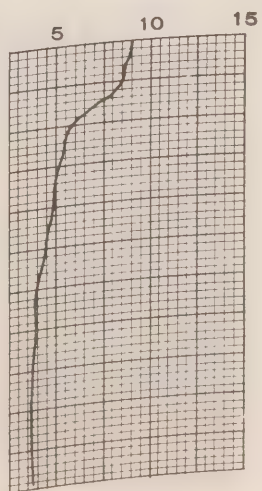
*64-06-24-19.9
49°57'N
144°49'W



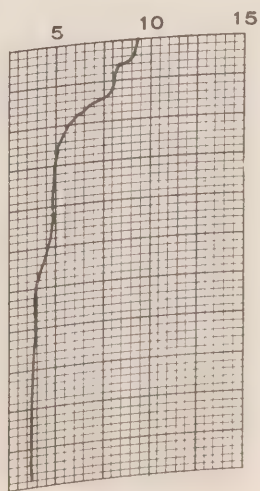
64-06-25-17.0
50°01'N
144°49'W



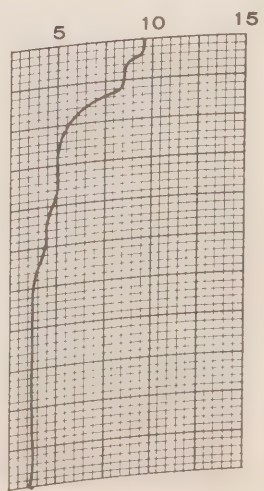
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50°00'N
144°52'W



64-06-26-17.0
49°58'N
144°57'W

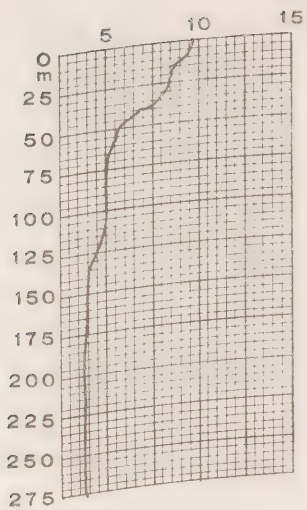


64-06-27-17.0
49°58'N
144°58'W



64-06-28-17.0
50°00'N
145°00'W

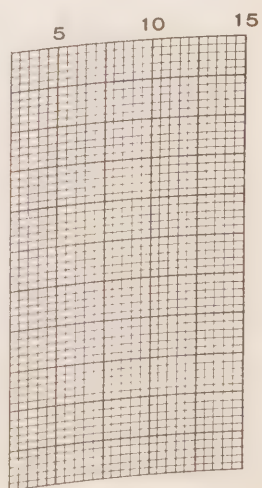
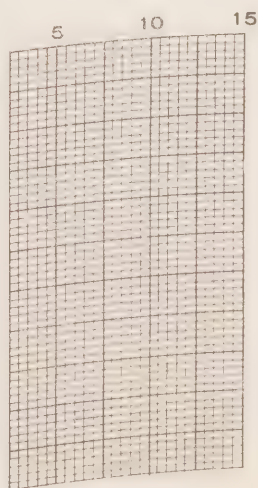
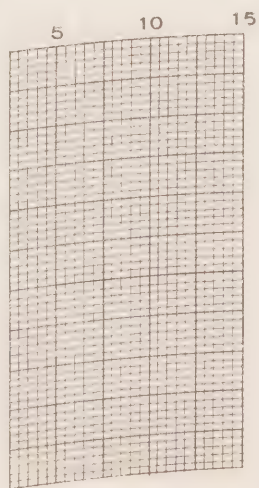
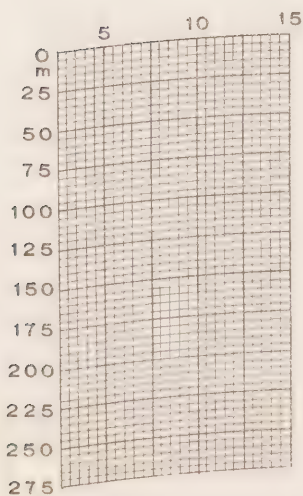
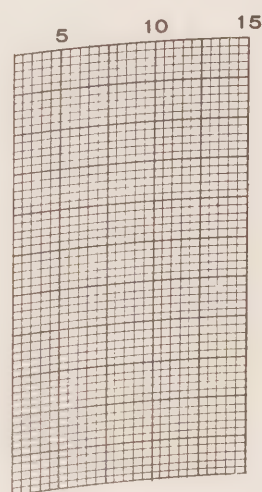
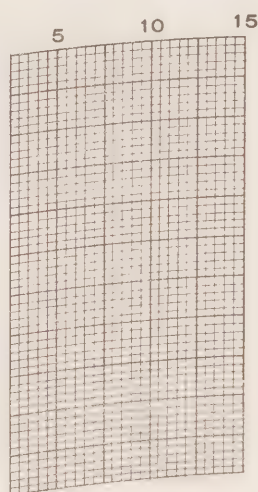
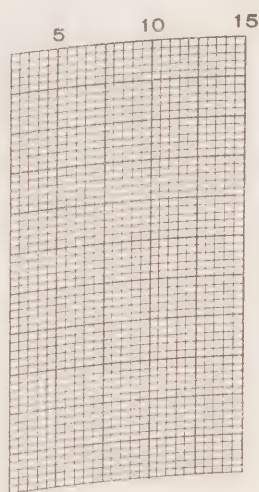
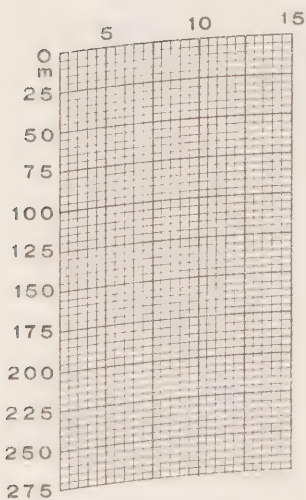
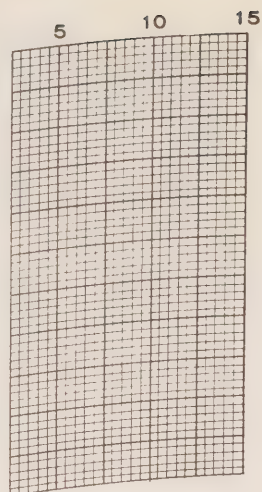
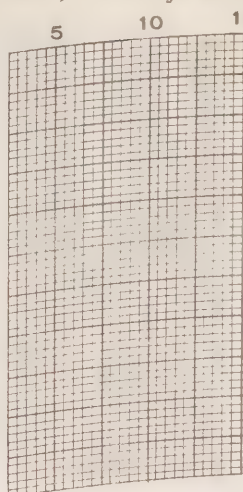
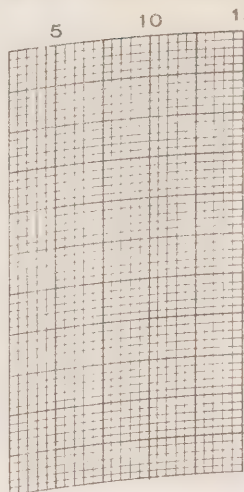
C.C.G.S. "St. Catharines", Survey P-64-2



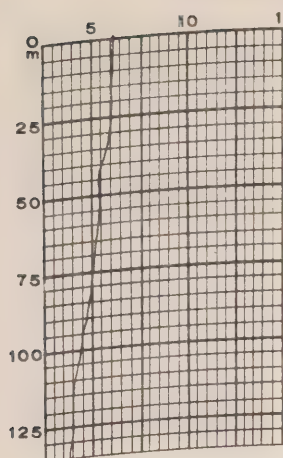
*64-06-28-19.5

49°56'n

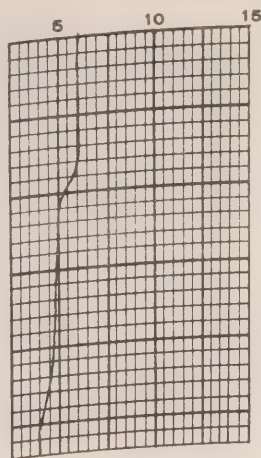
144°58'w



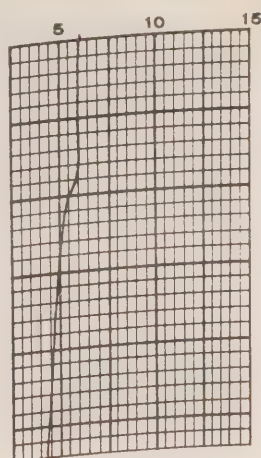
C.C.G.S. "St. Catharines", Survey P-64-2, OCEAN Series



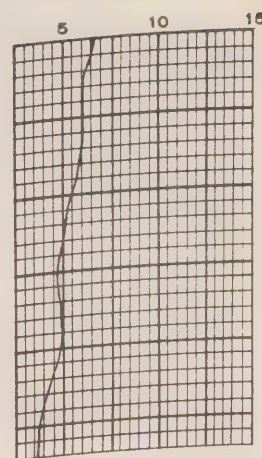
64-05-20-18.8
49°57'N
144°54'W



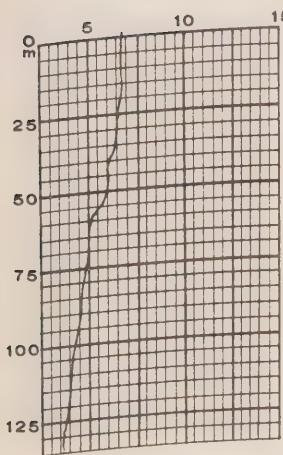
64-05-24-18.8
49°59'N
144°50'W



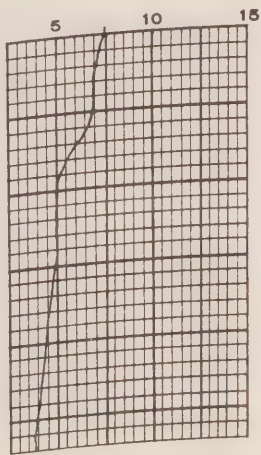
64-05-26-18.7
50°02'N
144°52'W



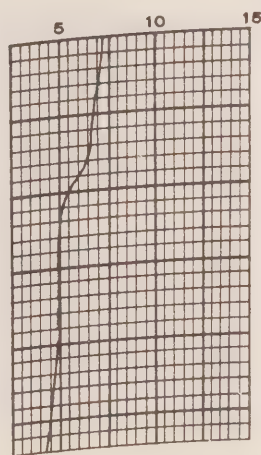
64-05-27-18.5
50°05'N
145°01'W



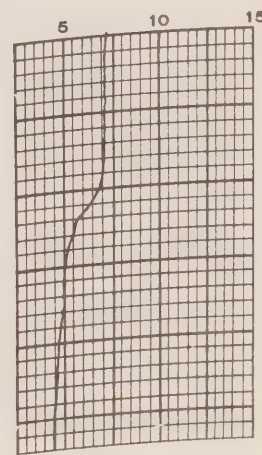
64-05-31-18.5
49°59'N
145°06'W



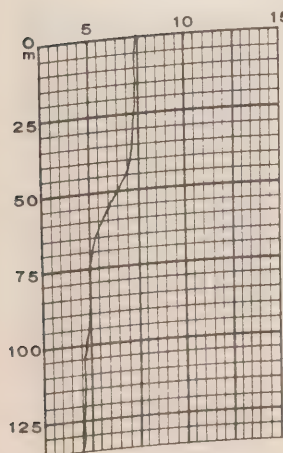
64-06-02-18.5
50°03'N
145°05'W



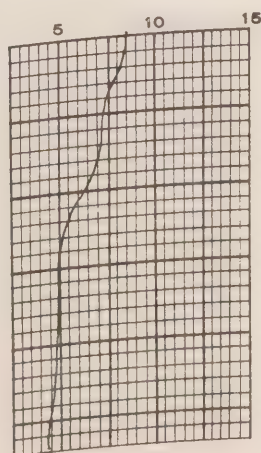
64-06-04-18.8
50°02'N
144°59'W



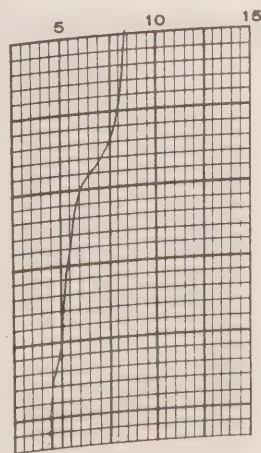
64-06-07-19.2
49°58'N
145°00'W



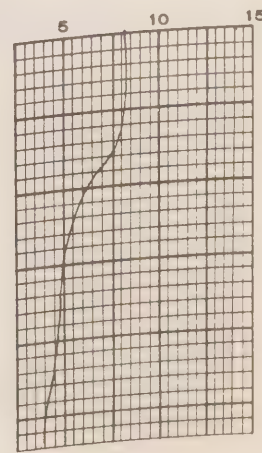
64-06-09-18.7
50°02'N
144°58'W



64-06-11-18.8
50°07'N
145°04'W

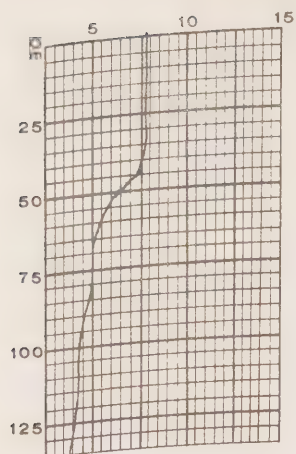


64-06-14-18.7
49°58'N
145°08'W

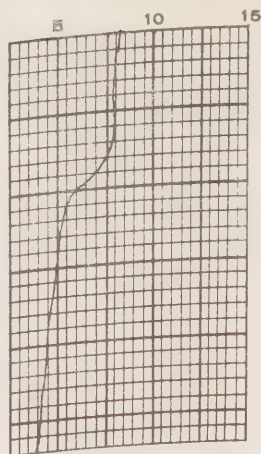


64-06-16-18.8
49°54'N
144°55'W

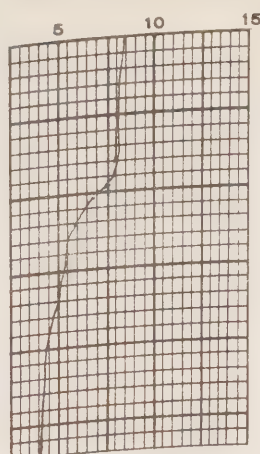
C.C.G.S. "St. Catharines", Survey P-64-2, OCEAN Series



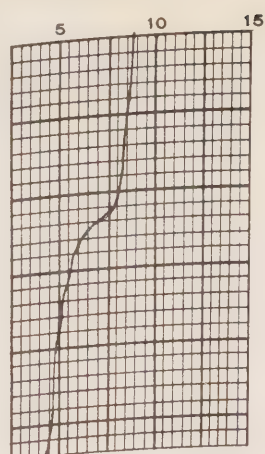
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49°57'N
144°58'W



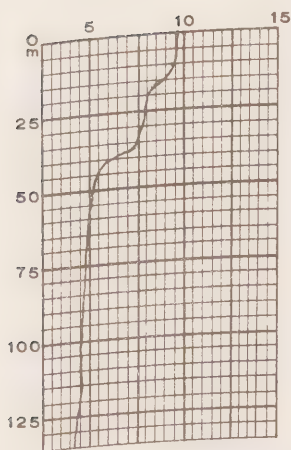
64-06-21-18.5
50°00'N
144°52'W



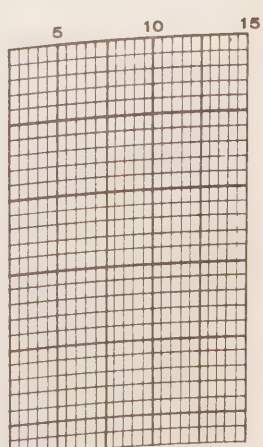
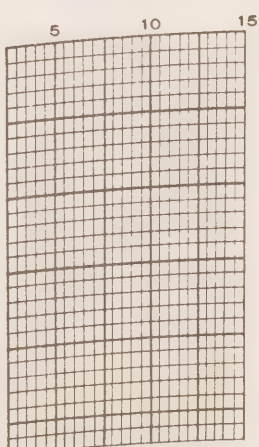
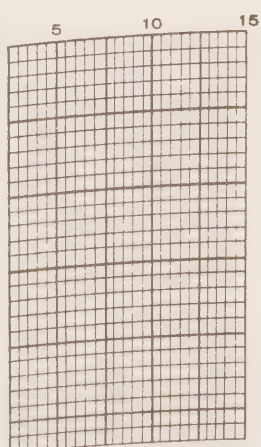
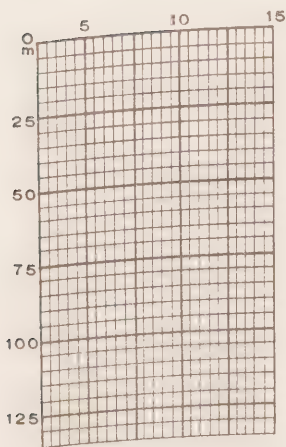
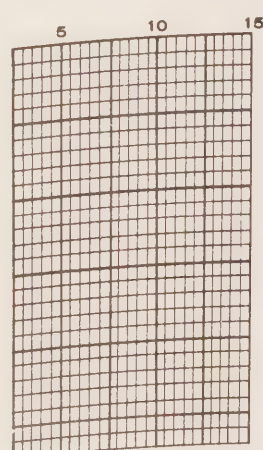
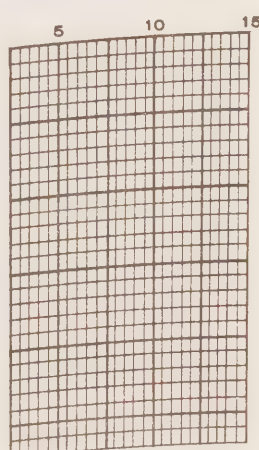
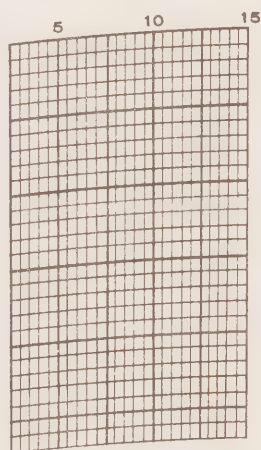
64-06-23-18.3
50°00'N
144°56'W



64-06-25-19.0
50°01'N
144°52'W



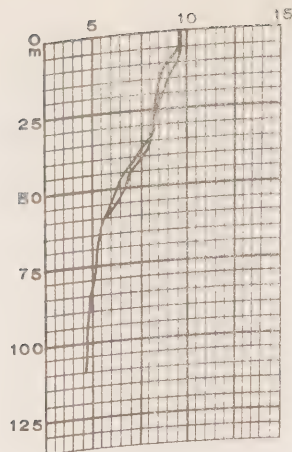
64-06-28-18.7
49°56'N
144°58'W



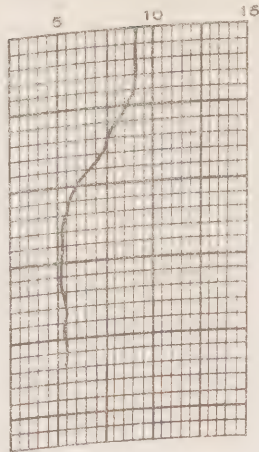
CCGS "STONETOWN" Patrol No. 61

Daily Bathythermograms
and
OCEAN series bathythermograms

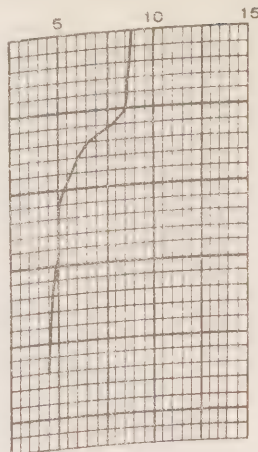
C.C.G.S. "Stonetown", Patrol No. 61



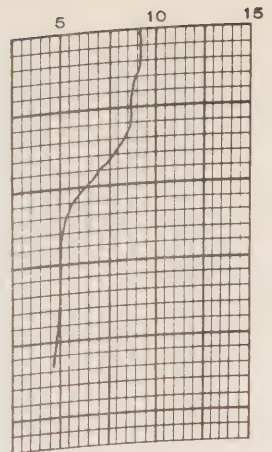
64-06-30-02.0
50°02'N
145°00'W



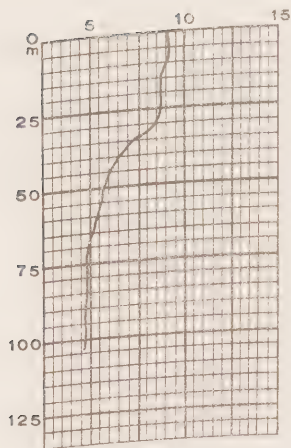
64-07-01-02.0
49°51'N
144°58'W



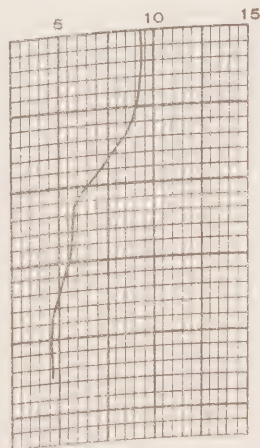
64-07-02-02.0
50°06'N
144°55'W



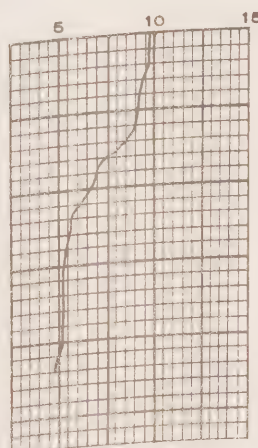
64-07-03-02.0
50°01'N
144°59'W



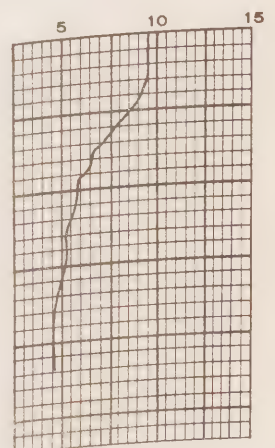
64-07-04-02.0
50°02'N
144°53'W



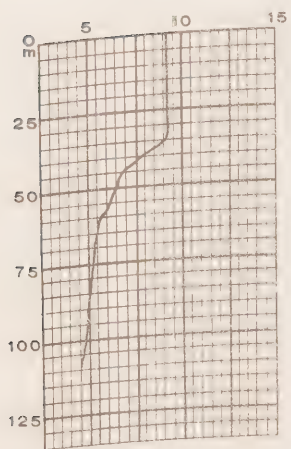
64-07-05-02.0
49°56'N
145°00'W



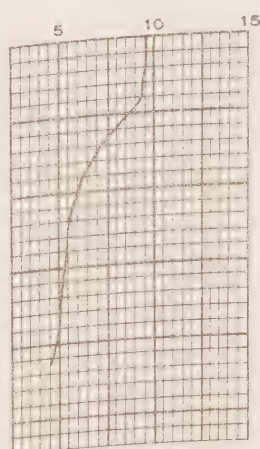
64-07-06-02.0
50°02'N
144°50'W



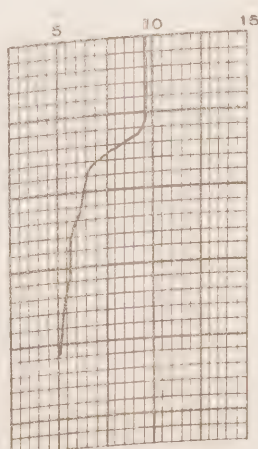
64-07-07-02.0
50°00'N
145°00'W



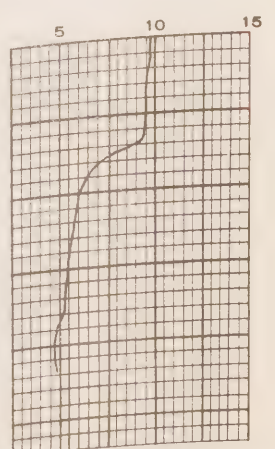
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50°02'N
144°56'W



64-07-09-02.0
50°03'N
144°56'W

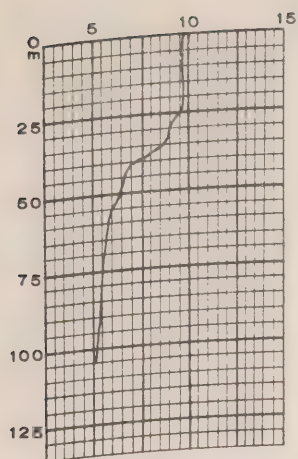


64-07-10-02.0
50°00'N
145°00'W

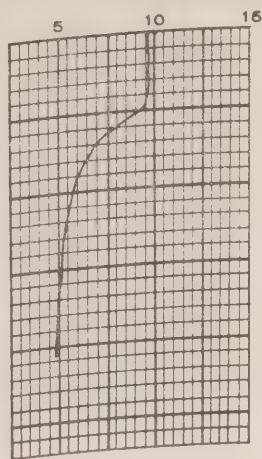


64-07-11-02.0
50°00'N
145°00'W

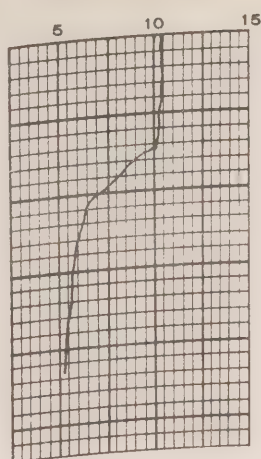
C.C.G.S. "Stonetown", Patrol No. 61



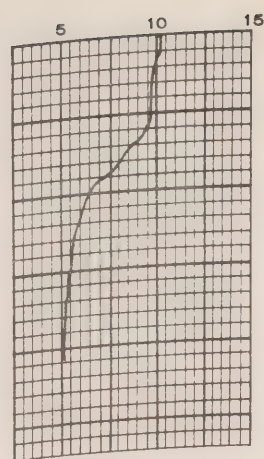
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145°00'W



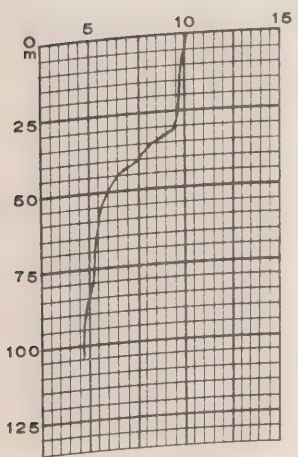
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144°57'W



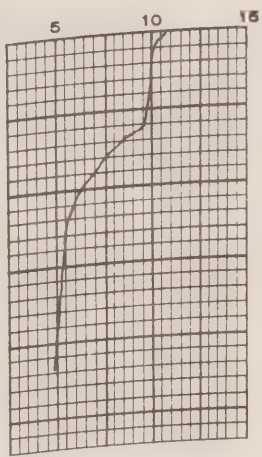
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145°03'W



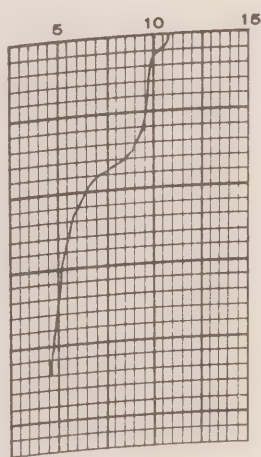
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145°01'W



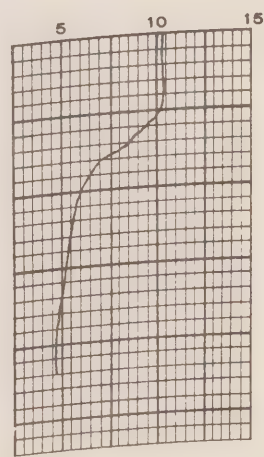
64-07-16-02.0
49°59'N
145°02'W



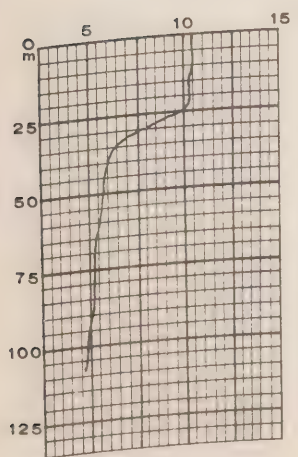
64-07-17-02.0
50°00'N
145°01'W



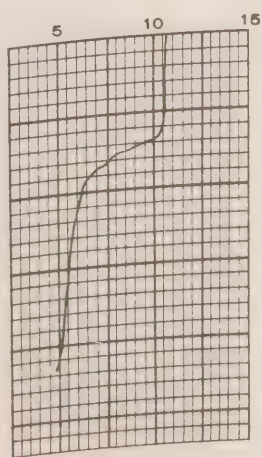
64-07-18-02.0
50°03'N
144°58'W



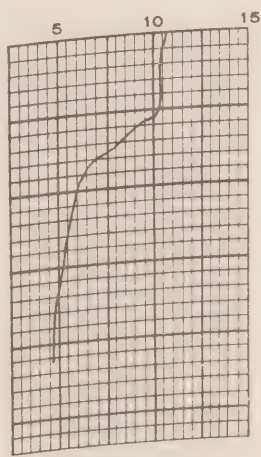
64-07-19-02.0
49°58'N
144°57'W



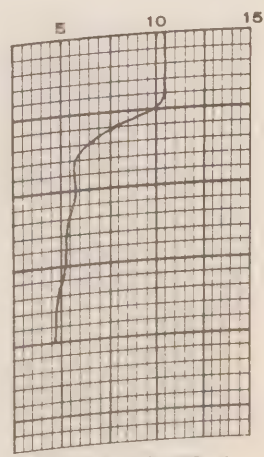
64-07-20-02.0
49°58'N
145°06'W



64-07-21-02.0
50°03'N
144°56'W

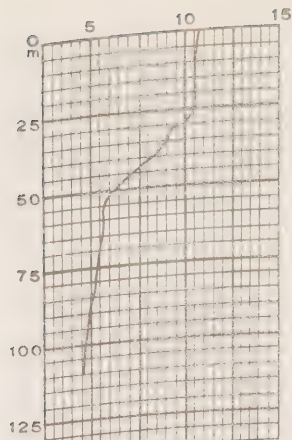


64-07-22-02.0
50°08'N
144°58'W

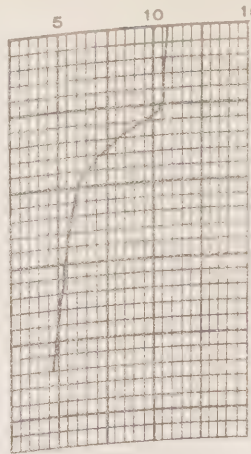


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145°00'W

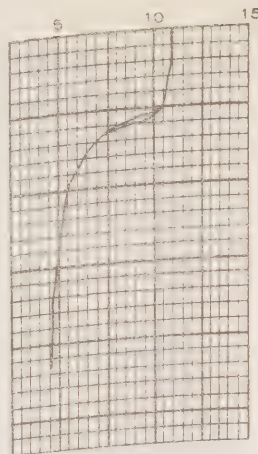
C.C.G.S. "Stonetown", Patrol No. 61



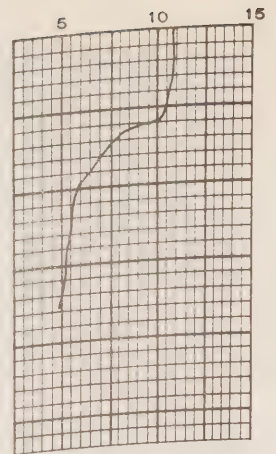
64-07-24-02.0
49°55'N
145°02'W



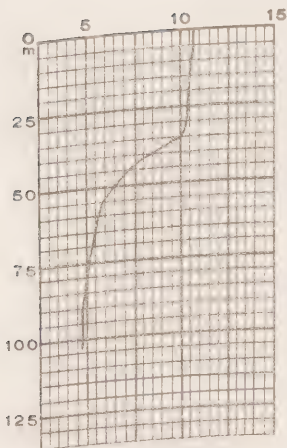
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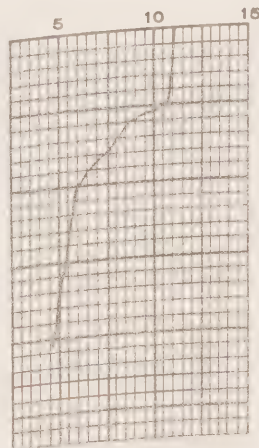
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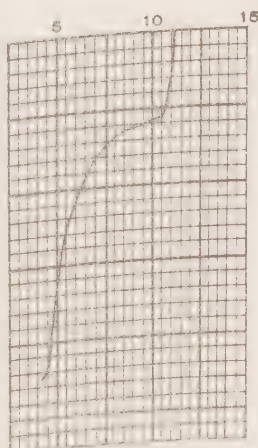
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49°55'N
145°02'W



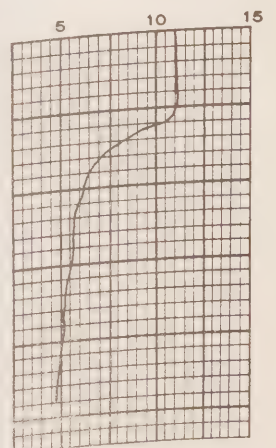
64-07-28-02.0
50°02'N
145°03'W



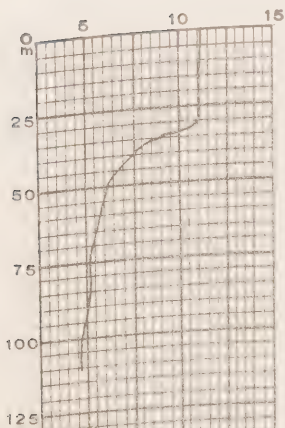
64-07-29-02.0
50°05'N
144°57'W



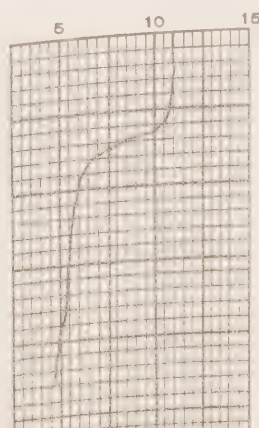
64-07-30-02.0
50°00'N
145°02'W



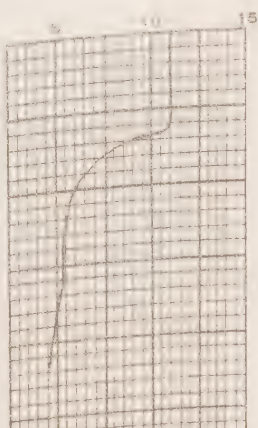
64-07-31-02.0
50°01'N
145°02'W



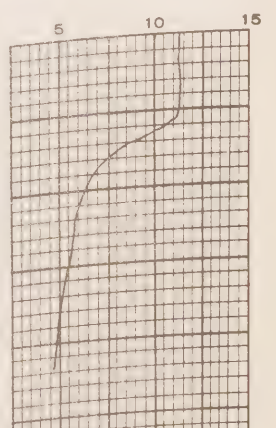
64-08-01-02.0
50°02'N
145°00'W



64-08-02-02.0
49°58'N
144°56'W

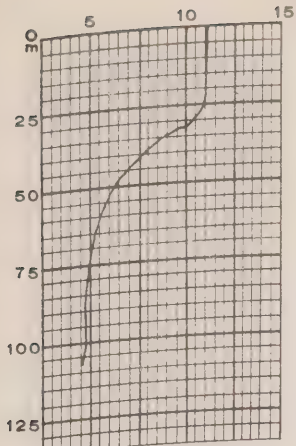


64-08-03-02.0
50°03'N
144°56'W

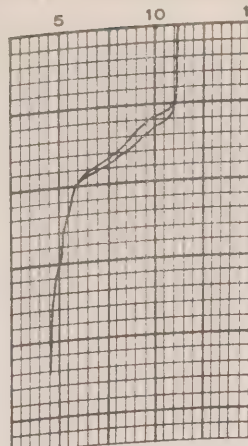


64-08-04-02.0
50°03'N
145°02'W

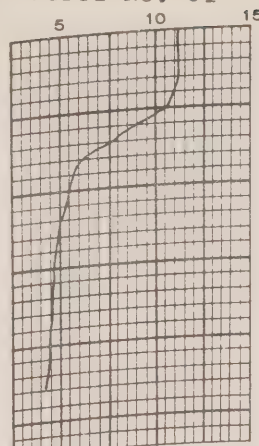
C.C.G.S. "Stonetown", Patrol No. 61



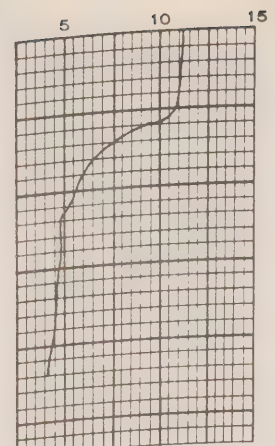
64-08-05-02.0

 $50^{\circ}02'N$
 $144^{\circ}58'W$


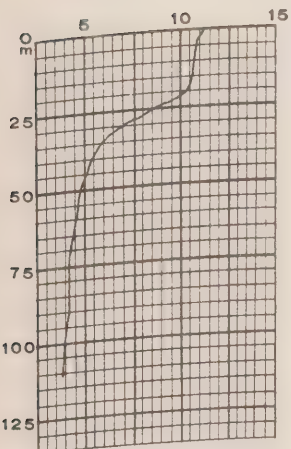
64-08-06-02.0

 $50^{\circ}01'N$
 $145^{\circ}00'W$


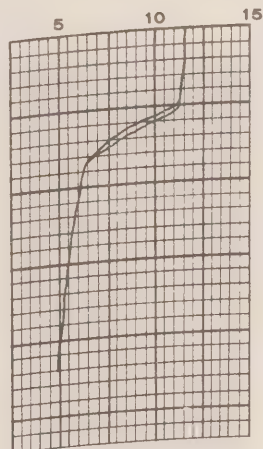
64-08-07-02.0

 $50^{\circ}02'N$
 $145^{\circ}03'W$


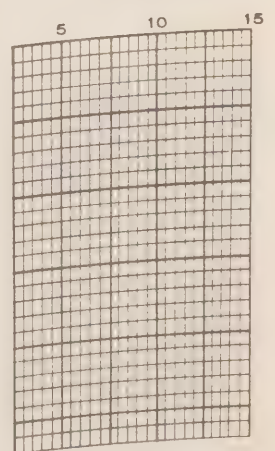
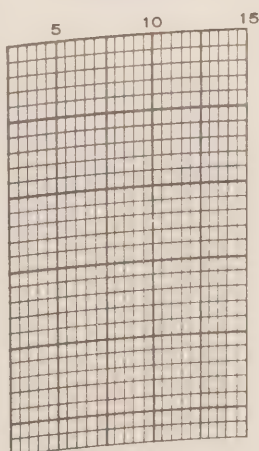
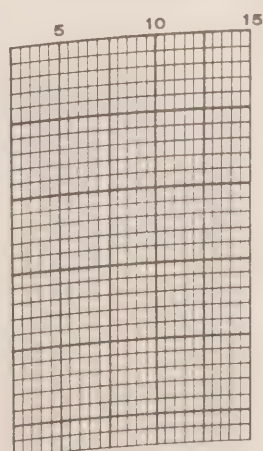
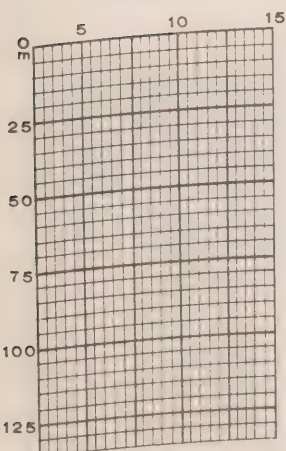
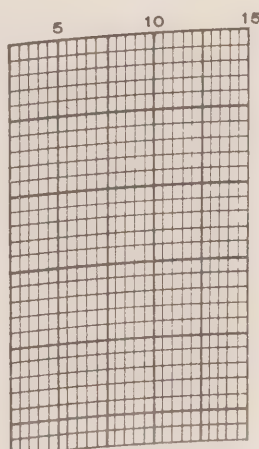
64-08-08-02.0

 $50^{\circ}00'N$
 $145^{\circ}00'W$


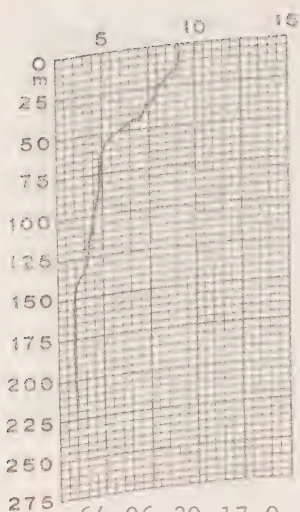
64-08-09-02.0

 $50^{\circ}02'N$
 $144^{\circ}58'W$


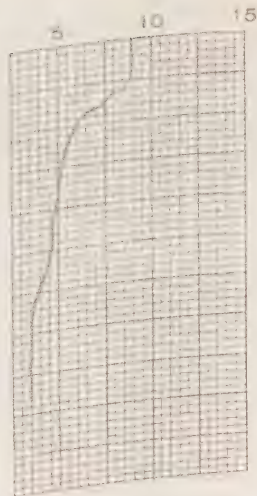
64-08-10-02.0

 $49^{\circ}58'N$
 $145^{\circ}01'W$


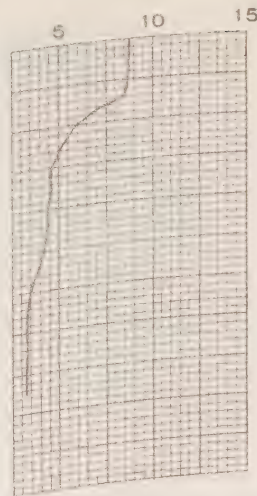
C.C.G.S. "Stonetown", Patrol No. 61



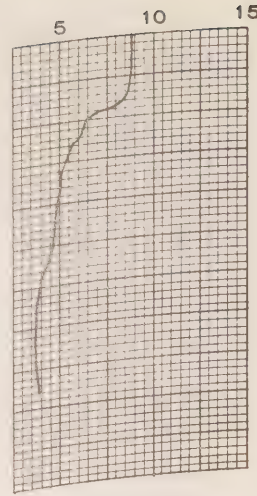
64-06-30-17.0
50°06'n
145°05'w



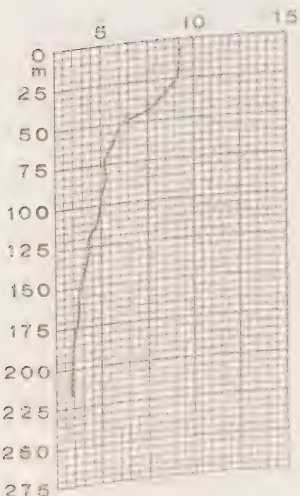
64-07-01-17.0
50°01'n
144°59'w



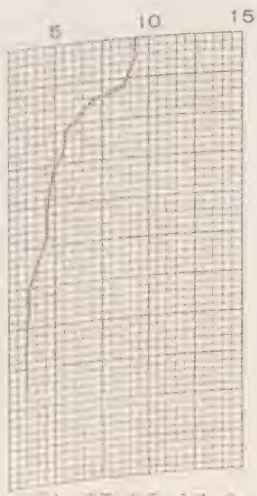
64-07-02-17.0
50°07'n
144°53'w



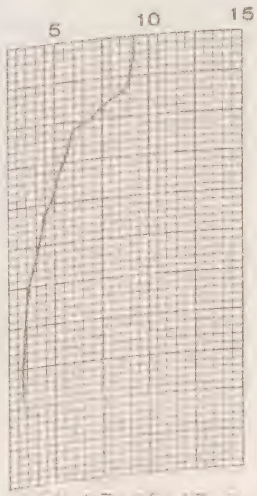
64-07-03-17.0
50°03'n
144°54'w



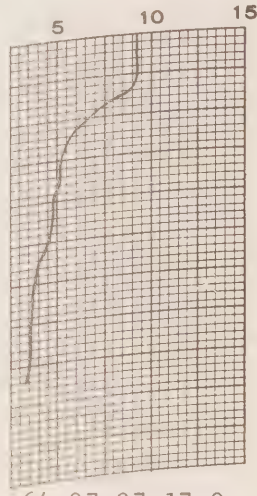
64-07-04-17.0
49°53'n
145°14'w



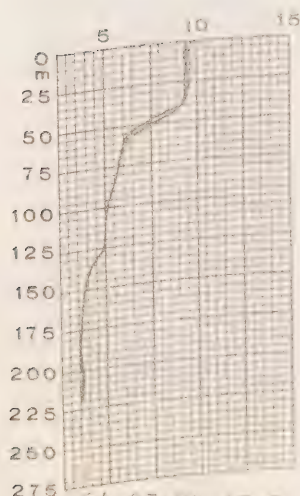
64-07-05-17.0
50°04'n
144°59'w



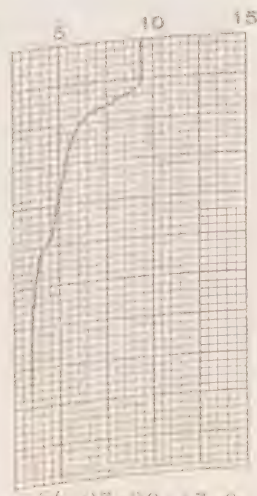
64-07-06-17.0
49°59'n
144°55'w



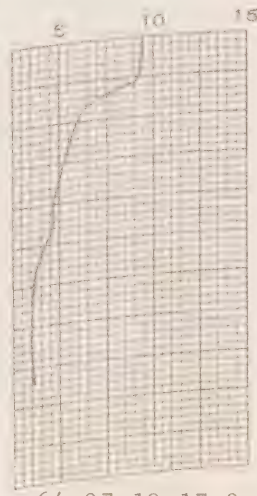
64-07-07-17.0
49°56'n
144°51'w



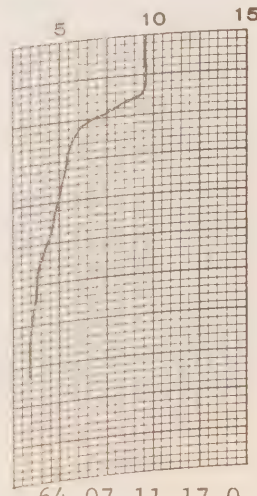
64-07-08-17.0
50°01'n
145°01'w



64-07-09-17.0
50°01'n
144°54'w

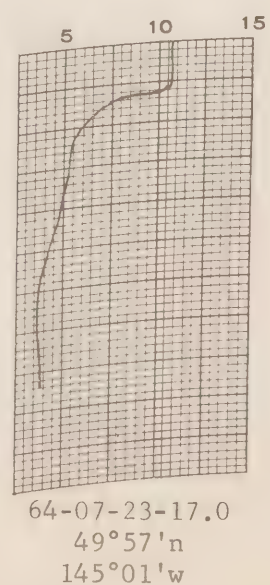
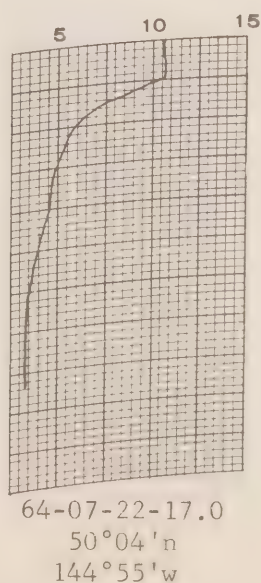
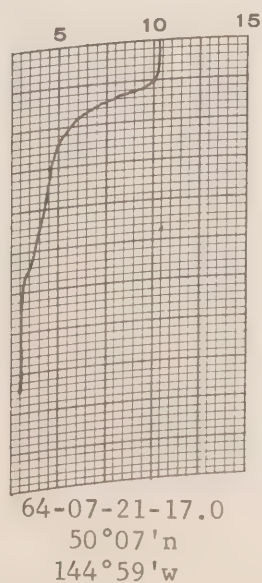
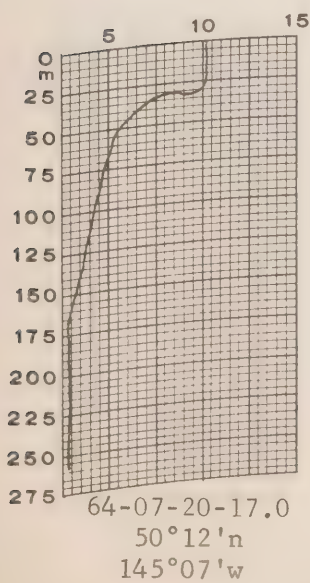
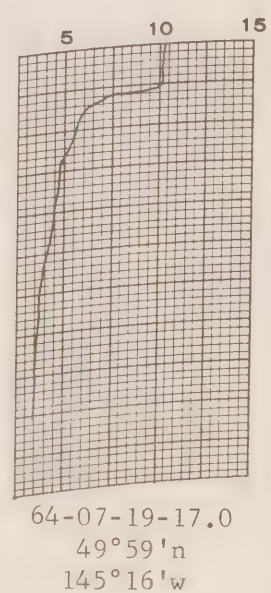
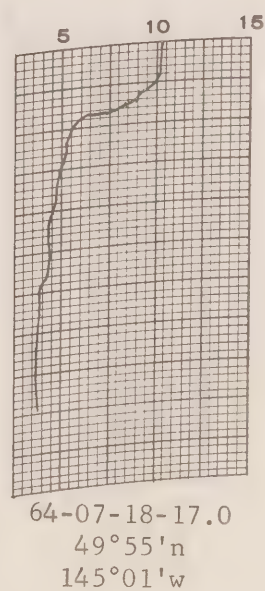
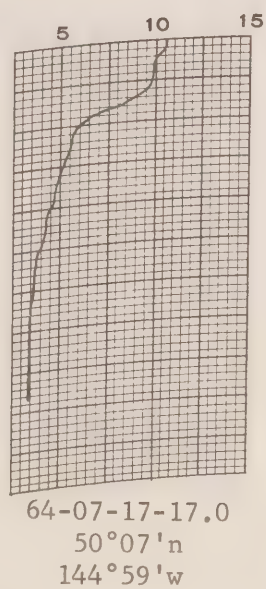
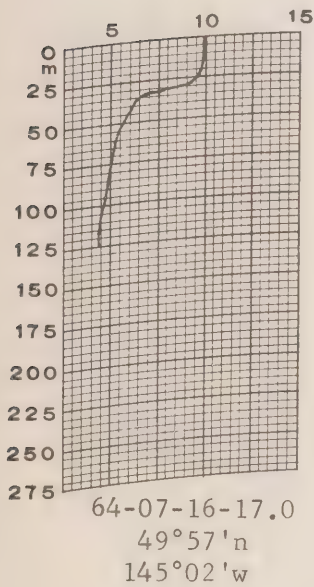
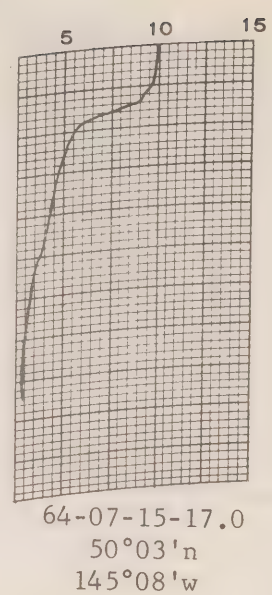
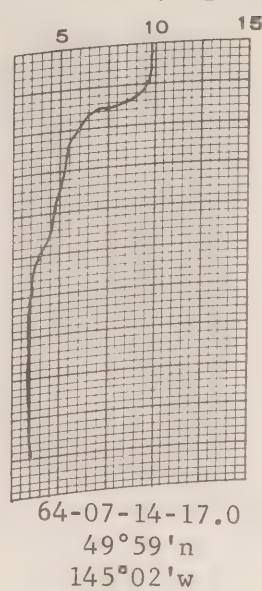
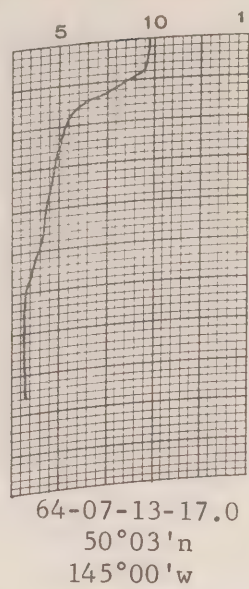
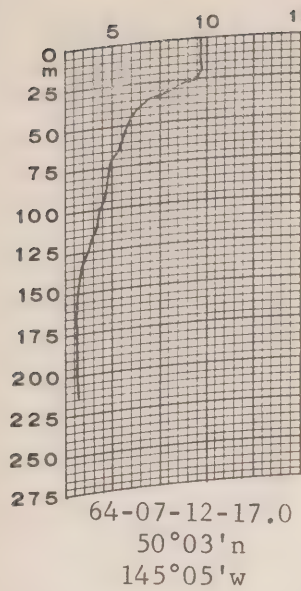


64-07-10-17.0
50°01'n
144°59'w

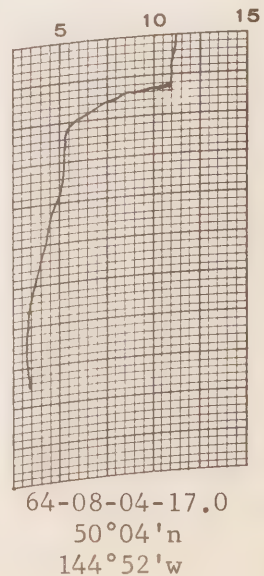
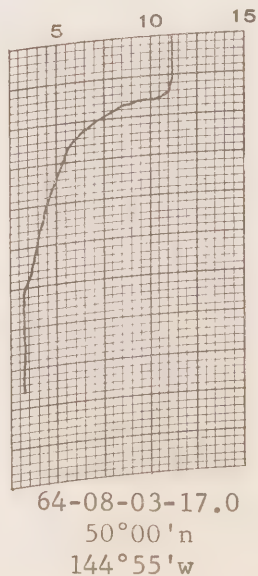
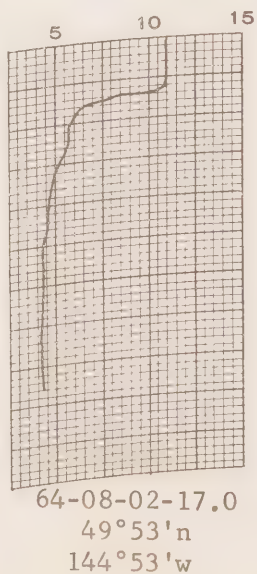
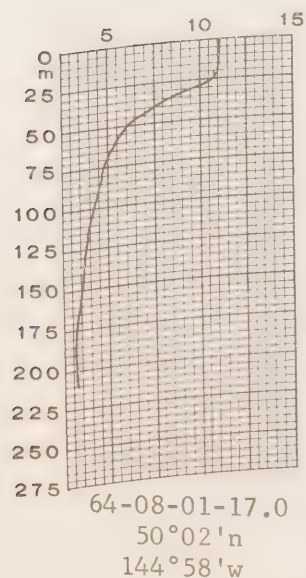
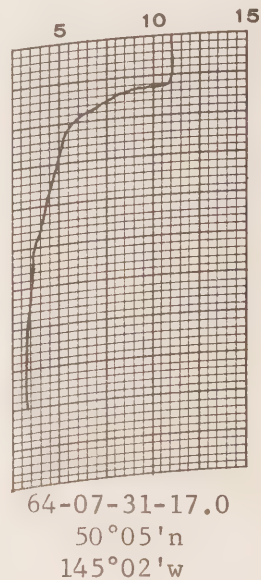
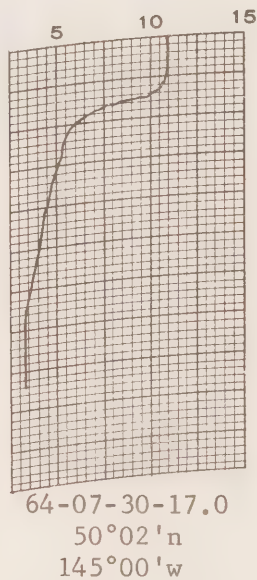
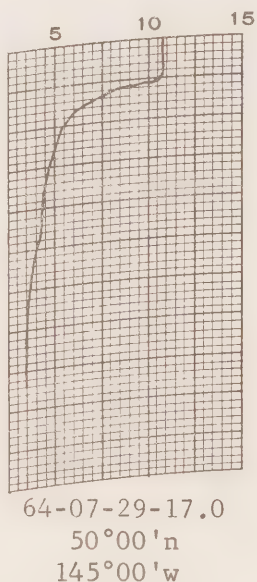
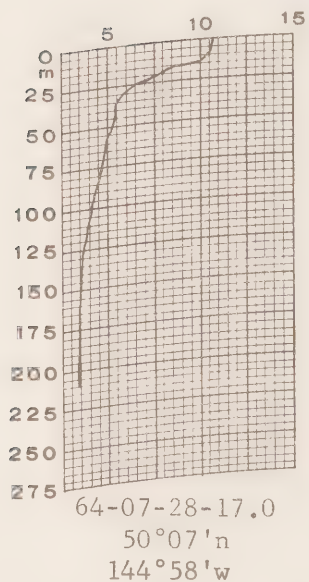
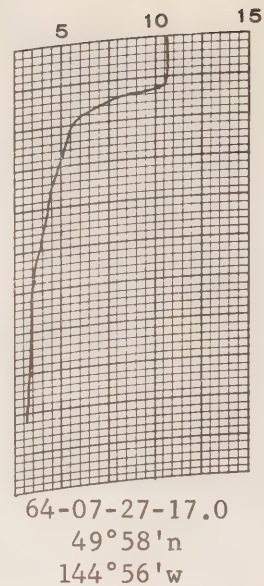
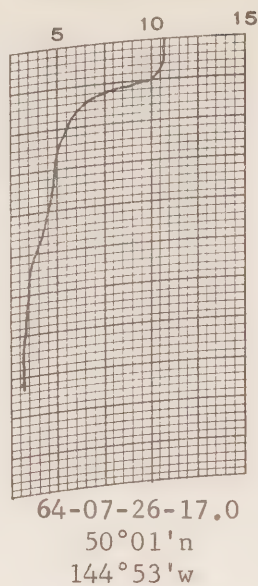
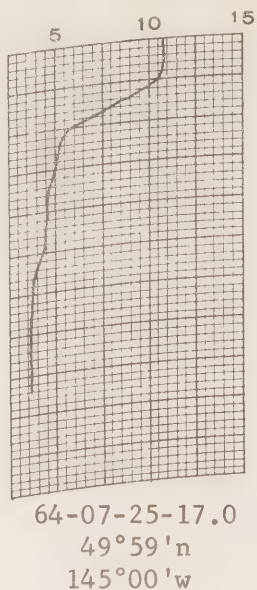
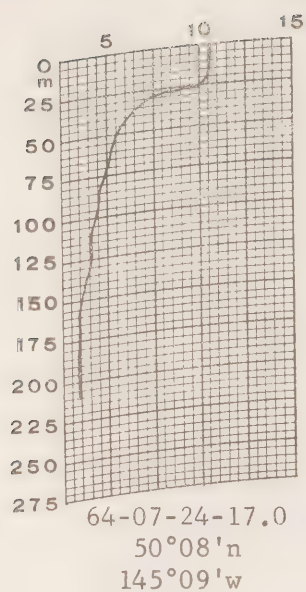


64-07-11-17.0
50°00'n
144°55'w

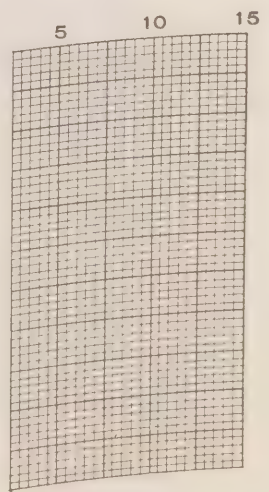
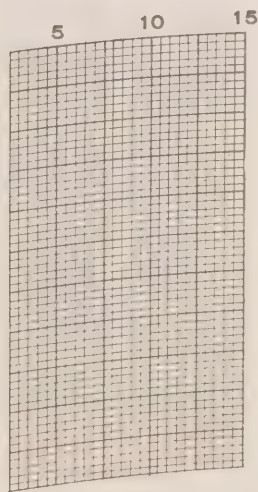
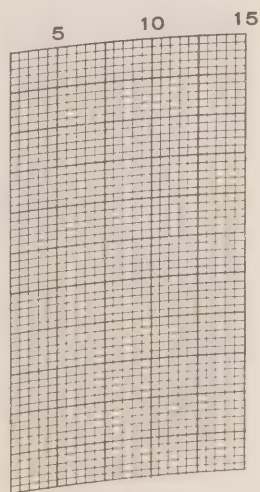
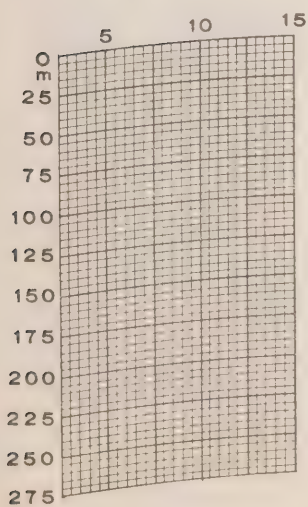
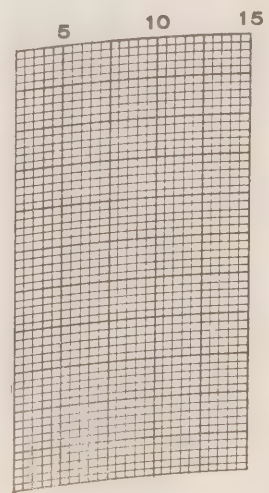
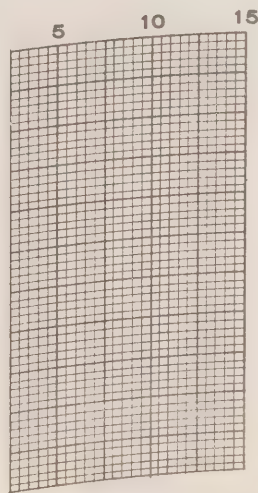
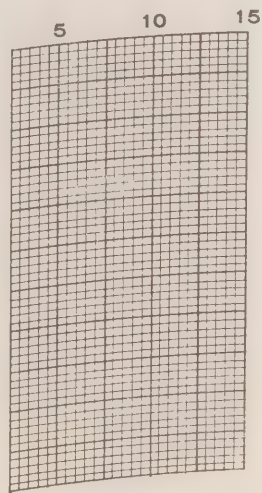
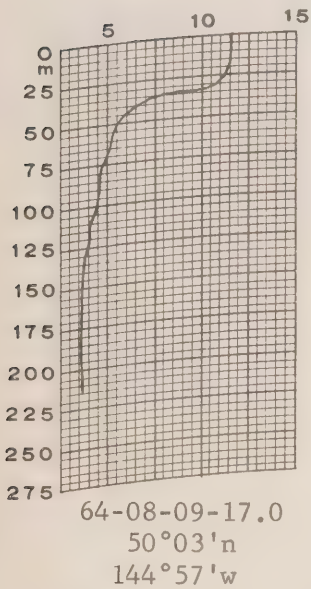
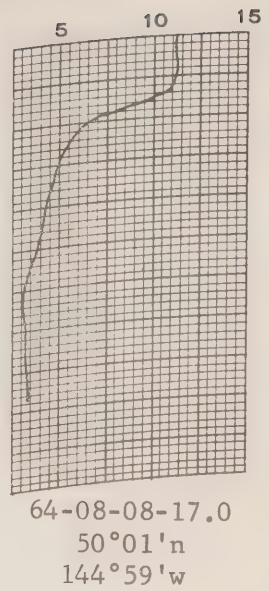
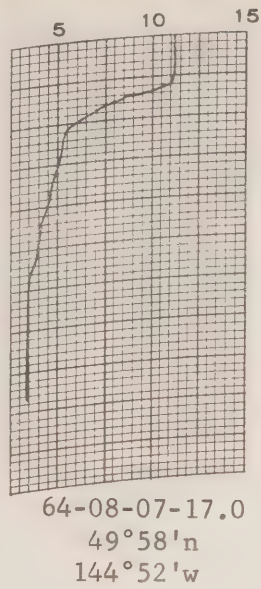
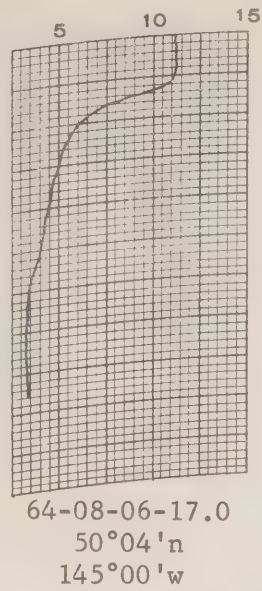
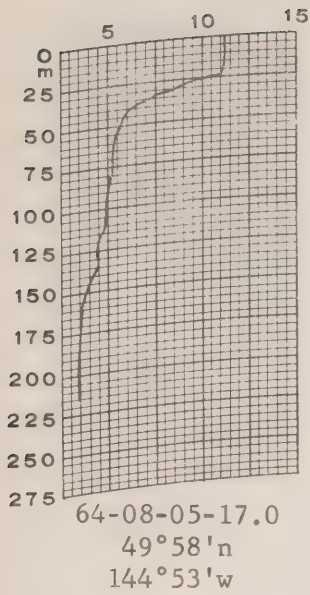
C.C.G.S. "Stonetown", Patrol No. 61



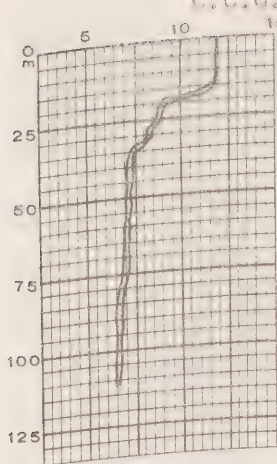
C.C.G.S. "Stonetown", Patrol No. 61



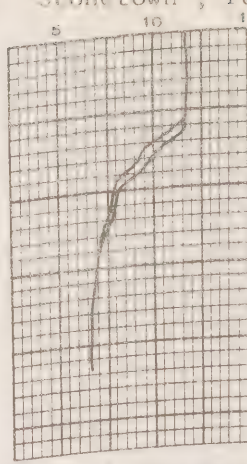
C.C.G.S. "Stonetown", Patrol No. 61



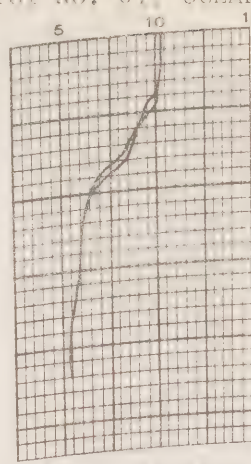
C.C.G.S. "Stonetown", Patrol No. 61, OCEAN Series



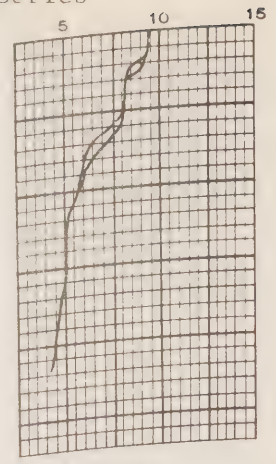
64-06-27-04.4
48°41'N
126°40'W



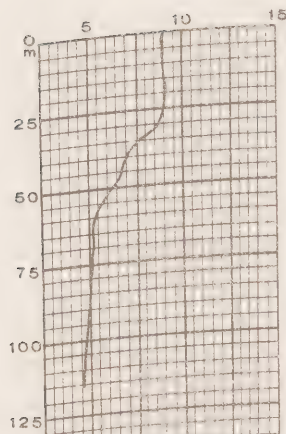
64-06-27-12.7
48°46'N
128°38'W



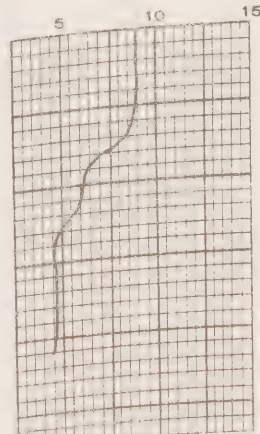
64-06-28-15.5
49°25'N
136°40'W



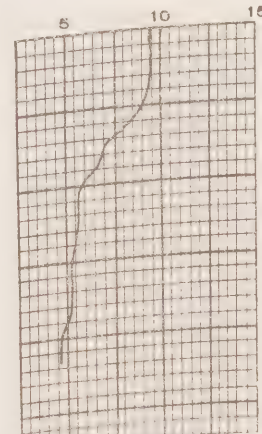
64-06-29-17.5
49°58'N
144°25'W



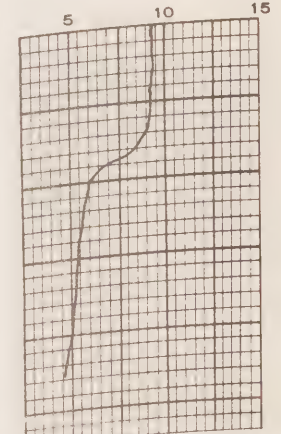
64-07-01-18.0
50°03'N
144°57'W



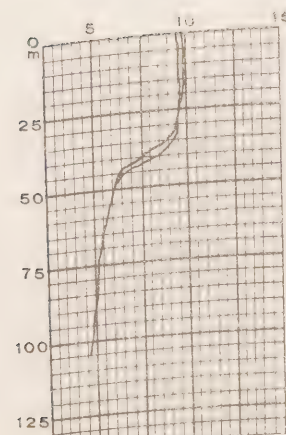
64-07-03-18.0
50°03'N
144°52'W



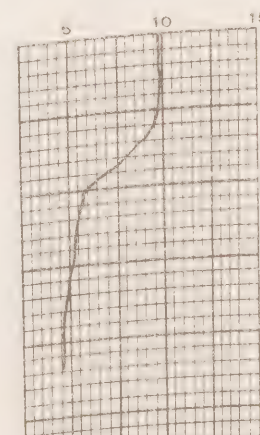
64-07-06-18.0
50°01'N
144°52'W



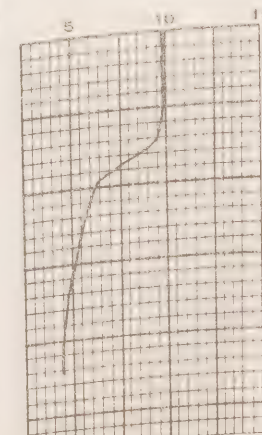
64-07-08-17.2
49°58'N
144°58'W



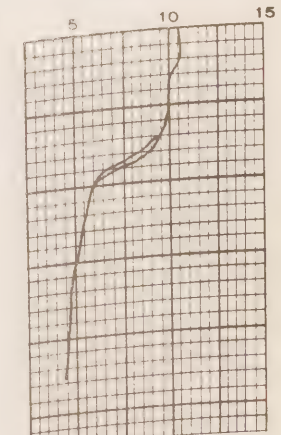
64-07-10-17.7
50°02'N
144°55'W



64-07-13-18.2
50°04'N
144°58'W

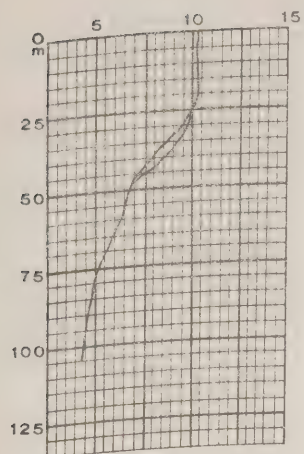


64-07-15-17.3
50°04'N
145°10'W

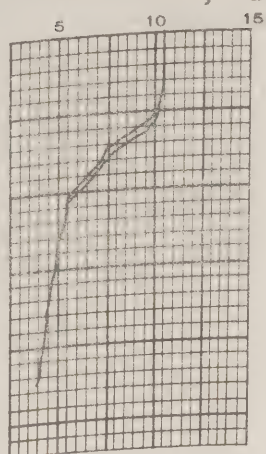


64-07-17-18.2
55°06'N
144°57'W

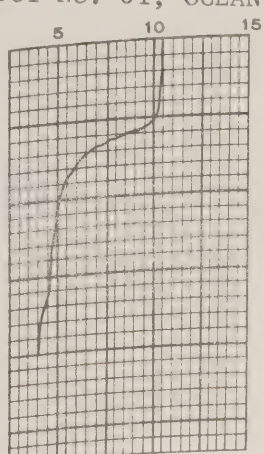
C.C.G.S. "Stonetown", Patrol No. 61, OCEAN Series



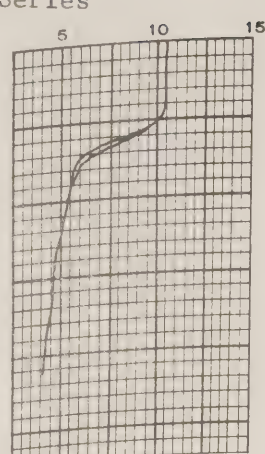
64-07-20-17.2
50°16'n
145°15'w



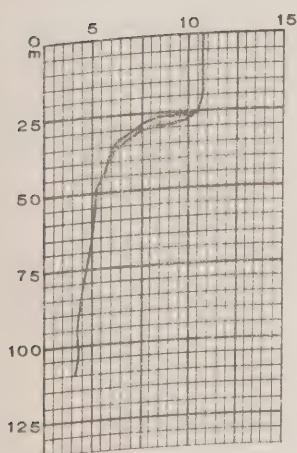
64-07-22-17.2
50°07'n
144°57'w



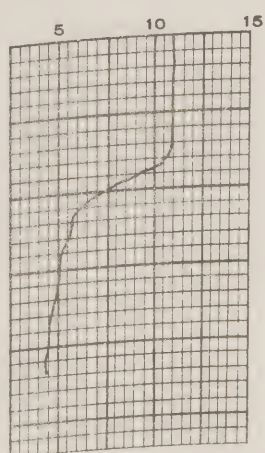
64-07-24-17.5
50°09'n
145°16'w



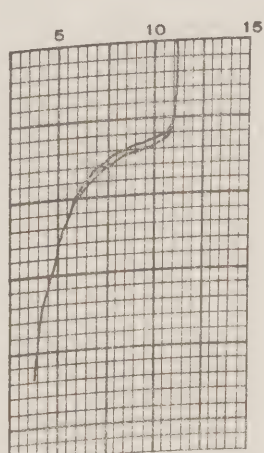
64-07-27-18.2
49°59'n
145°00'w



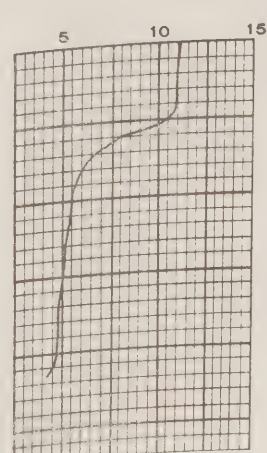
64-07-29-18.2
50°03'n
144°56'w



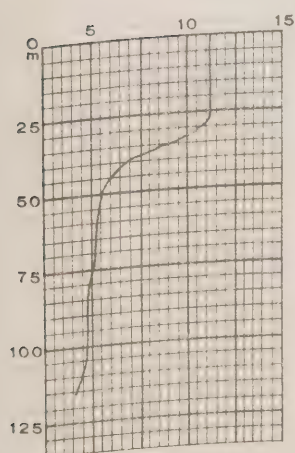
64-07-31-18.0
50°06'n
145°04'w



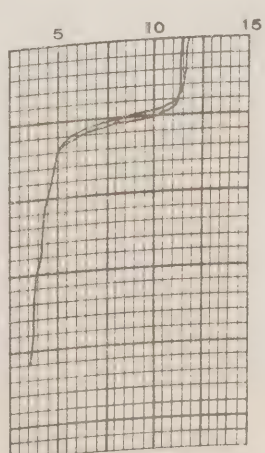
64-08-03-17.3
50°00'n
144°59'w



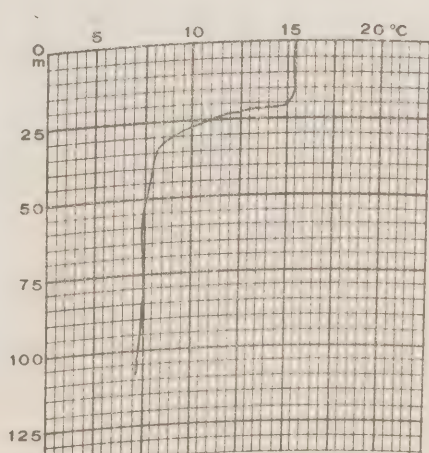
64-08-05-18.7
50°02'n
144°54'w



64-08-07-18.0
50°03'n
144°50'w



64-08-12-09.8
48°42'n
128°40'w



64-08-12-16.8
48°42'n
126°41'w

SECTION V

SURFACE SALINITY DATA

Surface salinity observations, Ocean Station "P"

Date-Time (GMT)	Position		Salinity (‰)
C.C.G.S. "St. Catharines", Survey P-64-2			
64-05-16-16.1	48°55'n	129°40'w	32.538
16-23.4	49°05'	131°40'	32.457
17-07.0	49°15'	133°40'	32.591
17-14.0	49°22'	135°40'	32.496
17-21.8	49°30'	137°40'	32.680
18-05.3	49°37'	139°40'	32.765
18-09.2	49°41'	140°40'	32.786
18-12.8	49°45'	141°40'	32.816
19-00.9	49°54'	143°40'	32.889
64-05-20-02.0	50°00'	145°02'	32.809
21	50°00'	145°00'	32.819
22	50°00'	145°00'	32.798
23	50°00'	145°00'	32.807
24	50°05'	145°06'	32.811
25	50°00'	145°03'	32.836
26	49°59'	145°05'	32.747
27	49°59'	144°59'	32.781
28	50°00'	145°00'	32.801
29	50°03'	145°02'	32.781
30	50°22'	144°59'	32.769
31	50°03'	144°48'	32.785
64-06-01-02.0	50°05'	144°51'	32.777
02	50°05'	145°08'	32.803
03	49°57'	145°00'	32.802
04	49°56'	145°06'	32.791
05	50°02'	145°05'	32.793
06	49°57'	145°00'	32.769
07	49°54'	144°57'	32.876
08	50°02'	145°01'	32.762
09	50°01'	145°01'	32.731
10	50°07'	144°52'	32.721
11	50°02'	145°00'	32.726
12	50°00'	145°00'	32.726
13	50°02'	144°54'	32.697
64-06-15-02.0	49°57'	145°00'	32.707
16	50°00'	145°00'	32.714
17	50°03'	145°04'	32.735
18	50°00'	144°56'	32.798
19	50°00'	144°58'	32.770

Surface salinity observations, Ocean Station "P"

Date-Time (GMT)	Position		Salinity (‰)
C.C.G.S. "St. Catharines", Survey P-64-2			
64-06-20-02.0	49°59' n	144°59' w	32.735
21	50°04'	145°00'	32.787
22	50°04'	145°02'	32.749
24	50°00'	145°00'	32.733
25	50°02'	145°02'	32.737
26	50°02'	145°02'	32.740
27	50°00'	145°00'	32.731
28	50°02'	145°02'	32.744

C.C.G.S. "Stonetown", Patrol No. 61

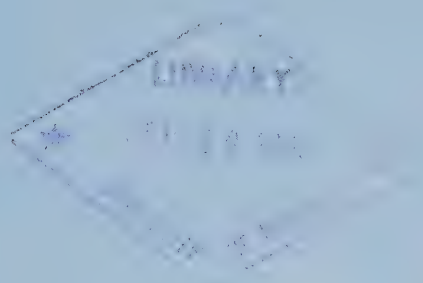
64-06-30-02.0	50°02' n	145°00' w	32.743
07-01	49°51'	144°58'	32.552
02	50°06'	144°55'	32.743
03	50°01'	144°59'	32.425
04	50°02'	144°53'	32.750
05	49°56'	145°00'	32.755
06	50°02'	144°50'	32.749
07	50°00'	145°00'	32.710
08	50°02'	144°56'	32.741
09	50°03'	144°56'	32.744
10	50°00'	145°00'	32.740
11	50°00'	145°00'	32.783
12	50°00'	145°00'	32.781
13	50°00'	144°57'	32.543
14	50°05'	145°03'	32.692
15	50°00'	145°01'	32.748
16	49°59'	145°02'	32.683
17	50°00'	145°01'	32.660
18	50°03'	144°58'	32.697
19	49°58'	144°57'	32.740
20	49°58'	145°06'	32.718
21	50°03'	144°56'	32.722
22	50°08'	144°58'	32.709
23	50°03'	145°00'	32.706
24	49°55'	145°02'	32.718
25	50°06'	144°56'	32.712
26	50°06'	144°50'	32.717
27	49°55'	145°02'	31.535

Surface salinity observations, Ocean Station "P"

Date-Time (GMT)	Position		Salinity (‰)
C.C.G.S. "Stonetown", Patrol No. 61			
64-07-28-02.0	50°02' n	145°03' w	32.670
29	50°05'	144°57'	32.745
30	50°00'	145°02'	32.729
31	50°01'	145°02'	32.697
08-01	50°02'	145°00'	32.667
02	49°58'	144°56'	32.750
03	50°03'	144°56'	32.700
04	50°03'	145°02'	32.705
05	50°02'	144°58'	32.680
06	50°01'	145°00'	32.689
07	50°02'	145°03'	32.737
08	50°00'	145°00'	32.678
09	50°02'	144°58'	32.660
10	49°58'	145°01'	32.573

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DATA RECORD
HALIFAX SECTION and SCOTIAN SHELF
Four Surveys

December 10, 1963 to September 9, 1964

No. 4

(1965) Data Record Series

(Canadian) Oceanographic Data Centre

Programmed by the
Canadian Committee on Oceanography

1965

ROGER DUHAMEL, F. R. S. C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1965

Cat. No. M58-1/1965-4

Price \$1.00

ERRATA

TO PREVIOUS PUBLICATIONS

in the

1964 DATA RECORD SERIES.

Publication Nos. 1 - 12.

The Note at the end of chapter on Observed Data Headings in Section II should read: "TRC" (trace) is reported when a chemical entry has a value smaller than the standard deviation of measurement for that particular variable.

Publication No. 1.

- (1) Figure 5. A station indicated in about position $60^{\circ}30'N$, $84^{\circ}00'W$. is an error.
- (2) Page 15. The name "van Deen" should read "van Veen".
- (3) Page 15. The plankton net should have been described as a Hensen net with an opening of 70 cms.
- (4) Page 147. The tabulated temperature at 30 m at station 217 should read -1.34.

Publication No. 5.

P.O.G. Cruise: P-63-4

Second flyleaf: First name following "Observers" is spelled incorrectly, should read: Mr. J.A. Stickland.

Page 14 Second line of chapter "Personnel": same as above.

Page 35 "Institute": Place name spelled incorrectly: Should read Nanaimo, B.C.

Publication No. 8.

In some copies of the above Data Record page 38 was left blank, due to a printing error.

The attached page No. 38 to be inserted where applicable.

C-REF-NO 345	YR 1962	DEPTH 83	WAVES 1 15X3	AIR T 07.7	VIS 93
CONS. NO 004	MONTH 2	MXSAMPD 01	WAVES 2 1442	WET B 07.7	STN 004
LAT 43-290N	DAY 06	NO. DPTH 7	WND-DIR 160	WW-CODE 63	
LON 62-270W	HR 09.5	W-COLOR	WND-SPD 14	CLD-TPE	
MARSD SQ 151		W-TRNSP	BARO 1002.	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	PO4 -P-	NO2	NO3	SIO	PH
095	0000	0340	32030		2551	14603					
095	0010	0326	32140		2561	14600					
095	0019	0326	32140		2561	14602					
095	0029	0326	32140		2561	14603					
095	0048	0324	32140		2561	14605					
095	0058	0335	32210		2565	14613					
095	0083	0411	32940		2616	14659					

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340	32030		2551	14603	0000	00000	2485
0010	0326	32140		2561	14600	0025	00001	2391
0020	0326	32140		2561	14602	0049	00005	2391
0030	0326	32138		2560	14603	0073	00011	2393
0050	0326	32147		2561	14607	0121	00031	2387
0075	0380	3265 C		2596	14641	0177	00066	2056

Publication No. 13.

Correct figures for temperature observations at the indicated depths for station 033, page 94 are as follows:

<u>DEPTH</u>	<u>TEMPERATURE</u>
0000	0686
0005	0690
0010	0690
0015	0680
0020	0670
0025	0640
0030	0440
0050	0400
0125	0380
0200	0375
0275	0370
0405	0361

Publication No. 14.

- Page 42: A. Low salinities, below 35%. Should read 35‰.
- B. High salinities, above 35%. Should read 35‰.

Publication No. 17.

Inside of back cover:

Printed Publications of the Canadian
Oceanographic Data Centre in the 1964
Data Record Series.

No. 12 Hudson Bay Project -- 1961 CRN 354

CRN 357

CRN 357 should read CRN 337.

Publication No. 18. Page 202 should follow page 203 and these
pages should be renumbered accordingly;
page 202 becomes 203 and page 203 becomes
202.

Inside of back cover:

No. 14 -- ICNAF 1963, Norwestland -- 2 Canada.
Should read "Norwestlant".

HALIFAX SECTION and SCOTIAN SHELF

December 10, 1963 to September 9, 1964

**CODC Reference: 01-63-007
10-64-004
10-64-005
14-64-003**

No. 4

1965 Data Record Series

**Canadian Oceanographic Data Centre
615 Booth St., Ottawa, Canada**

Programmed by the Canadian Committee on Oceanography

FISHERIES RESEARCH BOARD OF CANADA

HALIFAX SECTION (Part I)

Ship:	CNAV "Sackville"
Local Cruise designation:	S - 78
Cruise period:	December 10 - December 12, 1963
Observers:	C. J. Bayers
	PO Ball
	LSLM MacDonald
	LSLM McLean
	LSLM Suckling

ATLANTIC OCEANOGRAPHIC GROUP

Bedford Institute of Oceanography, Dartmouth, N. S.

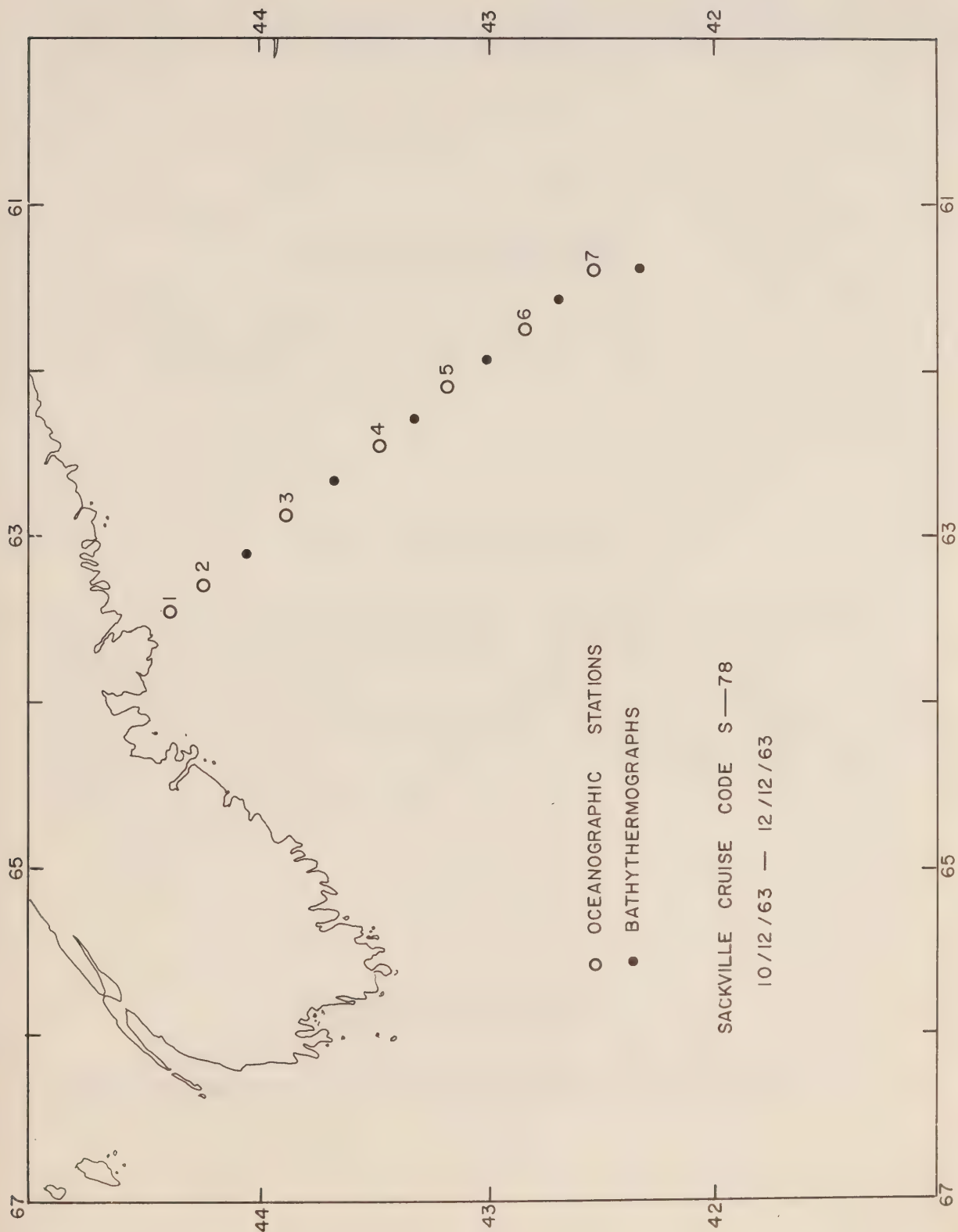
SECTION I

Description of data collection procedures

"SACKVILLE"



Fisheries Research Board



INTRODUCTION

The purpose of the cruise was to occupy the Halifax Section; to familiarize Navy meteorological personnel with the techniques of oceanographic sampling, and to give them practical experience in single observer forecasting. The program, as laid out, was not completed as adverse weather persisted during the period of the cruise.

EXTRACT OF CRUISE LOG

Departed Halifax, N. S. - December 10, 1963.

Arrived Halifax, N. S. - December 12, 1963.

OBSERVATION PROCEDURES

A total of 7 oceanographic stations was completed including water temperature readings and water samples taken at standard depths. A bathythermograph was taken at each station and one between stations. The reversing water bottles used were of the Knudsen type with Richter and Wiese or Yoshino reversing thermometers. Surface water samples for temperature and salinity were obtained with a plastic bucket. The weather observations on each station were taken by the scientific staff since this work was included in the training.

LABORATORY PROCEDURES

Salinity analyses were conducted in the salinity laboratory of the Bedford Institute of Oceanography using an NIO conductivity bridge.

Temperature and meteorological data were checked prior to entry on data summary sheets for publication by the CODC,

BATHYTHERMOGRAPH DATA

A total of 13 BT observations was taken and later processed at the BT Data Centre of the Bedford Institute of Oceanography.

PERSONNEL

At Sea:

C. J. Bayers
PO Ball
LSLM MacDonald
LSLM McLean
LSLM Suckling
LSLM Switzer
LSLM Virgint
LSLM Huckell

Data Analyses

Compilation of Data:	J. R. Chevrier C. J. Bayers T. A. Holler
Salinity determinations:	M. E. MacLean W. Young
B. T. processing:	T. A. Grant D. E. MacDonald

SECTION II

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "**estimate of precision**" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "**interpolation error estimate**" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T, S, O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "**measurement error estimate**" comprises the "**combined measurement and interpolation error estimate**". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

1 IDENT. CODE		2 LATITUDE (N=+)		3 LONGITUDE (E=+)		4 DATE		5 TIME		6 HOURS		7 MINUTES		8 VESSEL	
COUNTRY INST.		DEG. MIN.		DEG. MIN.		YEAR MONTH DAY		HOURS MIN.		HOURS MIN.		ENTERED BY		CHECKED BY	
10 COLOUR TRANS.		11 WAVES I		12 WAVES II		13 WIND		14 AIR TEMP.		15 WFT BULB		16 W.W. CODE		17 CLOUD	
20		21		22		23		24		25		26		27	
28		29		30		31		32		33		34		35	
36		37		38		39		40		41		42		43	
44		45		46		47		48		49		50		51	
52		53		54		55		56		57		58		59	
60		61		62		63		64		65		66		67	
68		69		70		71		72		73		74		75	
76		77		78		79		80		81		82		83	
84		85		86		87		88		89		90		91	
92		93		94		95		96		97		98		99	
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748		749		750		751		752		753		754		755	
756		757		758		759		760		761		762		763	
764		765		766		767		768		769		770		771	
772		773		774		775		776		777		778		779	
780		781		782		783		784		785		786		787	
788		789		790		791		792		793		794		795	
796		797		798		799		800		801		802		803	
804		805		806		807		808		809		810		811	
812		813		814		815		816		817		818		819	
820		821		822		823		824		825		826		827	
828		829		830		831		832		833		834		835	
836		837		838		839		840		841		842		843	
844		845		846		847		848		849		850		851	
852		853		854		855		856		857		858		859	
860		861		862		863		864		865		866		867	
868		869		870		871		872		873		874		875	
876		877		878		879		880		881		882		883	
884		885		886		887		888		889		890		891	
892		893		894		895		896		897		898		899	
900		901		902		903		904		905		906		907	
908		909		910		911		912		913		914		915	
916		917		918		919		920		921		922		923	
924		925		926		927		928		929		930		931	
932		933		934		935		936		937		938		939	
940		941		942		943		944		945		946		947	
948		949		950		951		952		953		954			

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

σ_i = Standard deviation of the combined error estimates at standard oceanographic depth,

ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $1/3 (V_{i_1} - V_{i_2})$

γ = Interpolation polynomial coefficient.

Z_j = Observed depth.

Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the **combined measurement and interpolation error estimate**. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the **interpolation error estimate** is given only when $\frac{\sigma}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) WW-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

- (1) CRUISE REFERENCE NUMBER: Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.
- (2) CONSECUTIVE NUMBER: Indicates the chronological order in which the stations were occupied.
- (3) LATITUDE: Indicate the position of the platform at the time of observation.
- (4) LONGITUDE:
- (5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).
- (6) YEAR:
- (7) MONTH:
- (8) DAY:
- (9) HOUR: The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.
- (10) COUNTRY/INSTITUTE: The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.
- (11) DEPTH: The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".
- (12) MAXIMUM SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).
- 00 m - 50 m = 00
51 m - 150 m = 01
151 m - 250 m = 02
etc.

- (13) **NUMBER OF DEPTHS:** The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) **WATER COLOUR:** A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) **WATER TRANSPARENCY:** The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage.
- NOTE:** The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) **WAVES 1**
($d_w d_w P_w H_w$ -code): The direction, period and height of the wind-propagated wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) **WAVES 2**
($d_w d_w P_w H_w$ -code): The direction, period and height of the predominant non-wind-propagated wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) **WIND DIRECTION:** The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) **WIND FORCE**
(WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED**
(WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) **BAROMETER:** The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) **AIR TEMPERATURE:** In degrees Celsius.
- (22) **WET BULB:** In degrees Celsius.
- (23) **ww CODE:** Present Weather Code (See Table 7). Ref: WMO Code 4677.
- (24) **CLOUD TYPE:** The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) **CLOUD AMOUNT:** The sky coverage in eighths (See Table 9) Ref: WMO Code 2700.
- (26) **VISIBILITY:** Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) **STATION:** A station reference number, assigned by the institute prior to, or during the survey.
- (28) **HOURS AFTER HIGH WATER:** Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_2
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01°C . Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 \text{ C1\%}$, reported in:
 a. 1/100 parts per 1000, or
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

(8) PO ₄	Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
(9) -P-	Total Phosphorus reported to hundredths of microgram-atoms per litre.
(10) NO ₂	Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre — No dissolved nitrogen included.
(11) NO ₃	Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
(12) SiO ₂	Silicate-Silicon reported to tenths of microgram-atoms per litre.
(13) pH	The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY: A. The reported salinity values are measured to three decimal places.
 (i) the interpolation error estimate is less than twice the standard deviation of measurement.
 —the interpolated value is reported to three decimal places (e.g., 30.139).
 (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 —the interpolated value is reported to two decimal places, and followed by the interpolation error estimate (e.g., 29.23 C).
 B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 —the interpolated value is reported to two decimal places, and followed by the combined measurement and interpolation error estimate (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "Introduction" to section II of the data record).

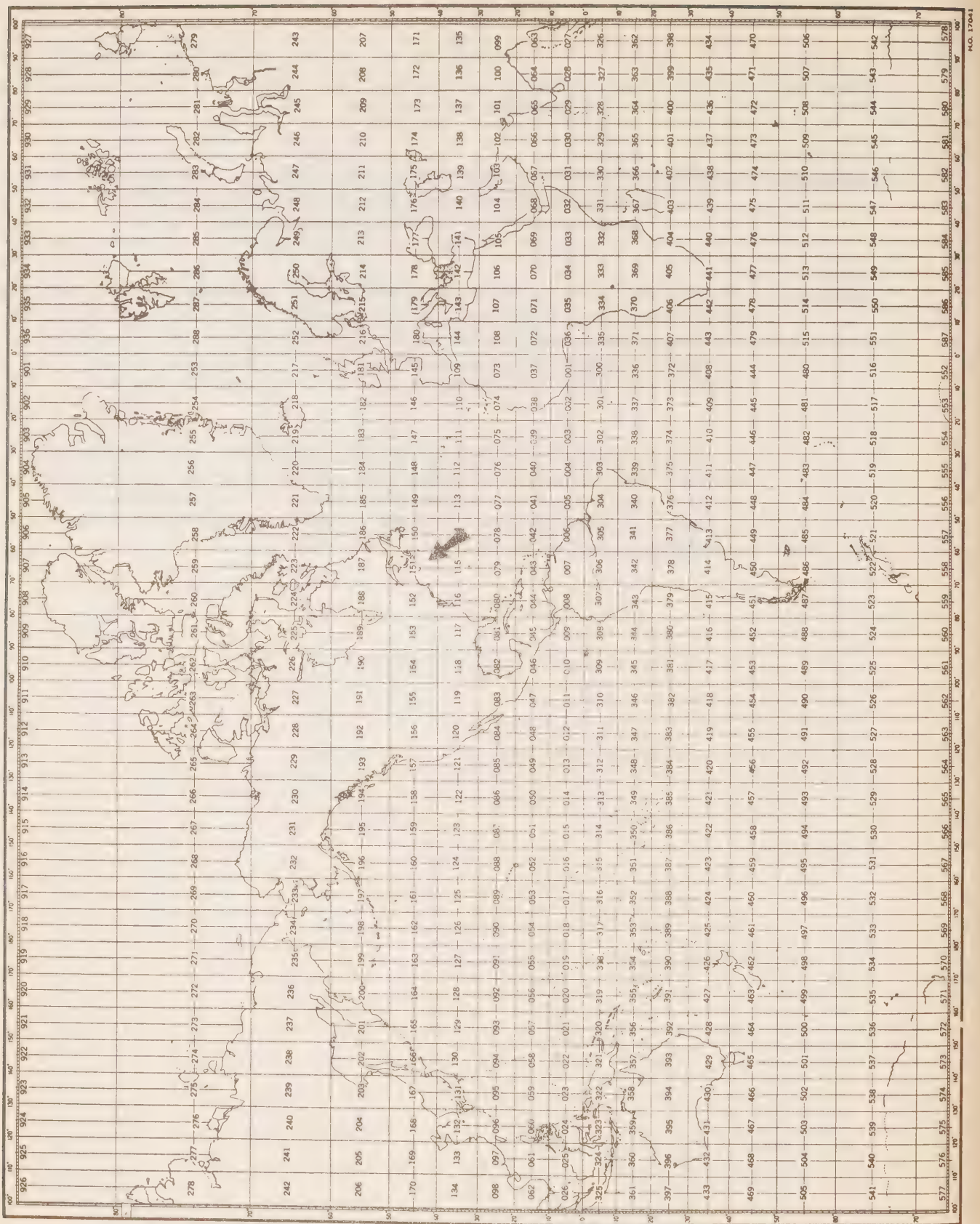
- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^P \delta \rho dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = \frac{1}{g} \int_0^P \rho \delta dp = \int_0^Z \rho \delta dz$$
- χ is expressed in units of 10^8 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

† (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

* (Asterisk): this character may occur in the interpolated portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one observed depth interval. The third, and all consequent levels within that interval are preceded by the asterisk to indicate that more than two machine interpolations were carried out, utilizing the same set of interpolation parabolas.

+ this character may occur immediately following an interpolated value for temperature, salinity or dissolved oxygen at standard oceanographic depths. Its purpose is to indicate that the Rattray interpolation has been substituted by a linear interpolation. The OCEANS II computer program automatically branches to a linear interpolation routine when the Rattray error estimate is ≥ 5 .



MARSDEN SQUARE CHART

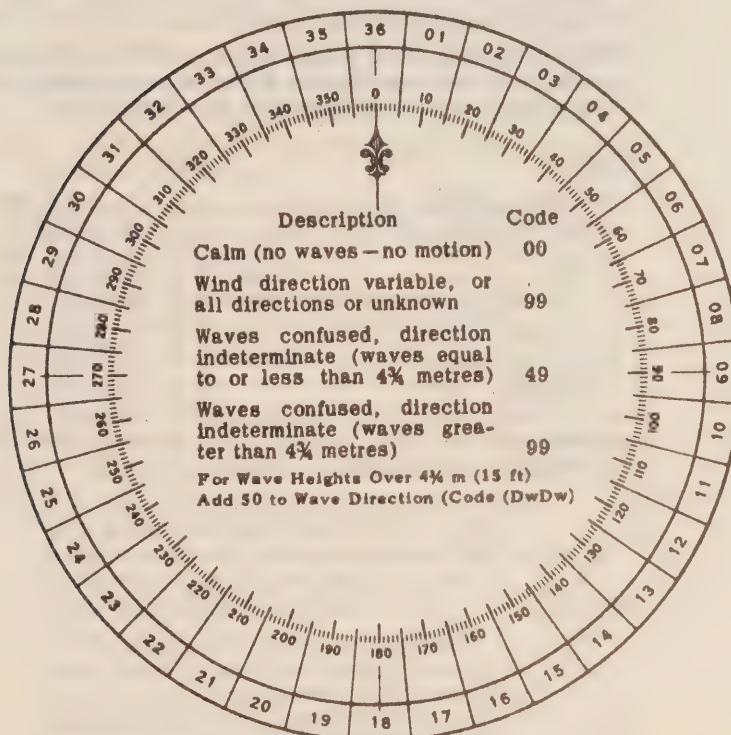
Table 1
CONVERSION
MINUTES TO $\frac{1}{4}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (Pw)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (Hw)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)		3 6½ m (21 ft)
4	2 m (6½ ft)		4 7 m (22½ ft)
5	2½ m (8 ft)		5 7½ m (24 ft)
6	3 m (9½ ft)		6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER
W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww			
No meteors except photometers	00	Cloud development not observed or not observable	
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
Haze, dust, sand or smoke	03	Clouds generally forming or developing	
	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	{ Patches of } shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea	
	12		{ More of less continuous }
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	{ at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	

ww = 20 - 29	Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	
20	Drizzle (not freezing) or snow grains	{ not falling as shower(s)
21	Rain (not freezing)	
22	Snow	
23	Rain and snow or ice pellets, type (a)	
24	Freezing drizzle or freezing rain	
25	Shower(s) of rain	
26	Shower(s) of snow, or of rain and snow	
27	Shower(s) of hail, or of rain and hail	
28	Fog or ice fog	
29	Thunderstorm (with or without precipitation)	
ww = 30 - 39	Duststorm, sandstorm, drifting or blowing snow	
30	{ Slight or moderate dust-storm or sand-storm }	{ - has decreased during the preceding hour
31		{ - no appreciable change during the preceding hour
32		{ - has begun or has increased during the preceding hour
33	{ Severe dust-storm or sand-storm }	{ - has decreased during the preceding hour
34		{ - no appreciable change during the preceding hour
35		{ - has begun or has increased during the preceding hour
36	Slight or moderate blowing snow	{ generally low (below eye level)
37	Heavy drifting snow	
38	Slight or moderate blowing snow	{ generally high (above eye level)
39	Heavy blowing snow	
ww = 40 - 49	Fog or ice fog at the time of observation	
40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
41	Fog or ice fog in patches	
42	Fog or ice fog, sky visible	{ has become thinner during the preceding hour
43	Fog or ice fog, sky invisible	
44	Fog or ice fog, sky visible	{ no appreciable change during the preceding hour
45	Fog or ice fog, sky invisible	
46	Fog or ice fog, sky visible	{ has begun or has become thicker during the preceding hour
47	Fog or ice fog, sky invisible	
48	Fog, depositing rime, sky visible	
49	Fog, depositing rime, sky invisible	

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

50	Drizzle, not freezing, intermittent	} slight at time of observation
51	Drizzle, not freezing, continuous	
52	Drizzle, not freezing, intermittent	} moderate at time of observation
53	Drizzle, not freezing, continuous	
54	Drizzle, not freezing, intermittent	} heavy (dense) at time of observation
55	Drizzle, not freezing, continuous	
56	Drizzle, freezing, slight	
57	Drizzle, freezing, moderate or heavy (dense)	
58	Drizzle and rain, slight	
59	Drizzle and rain, moderate or heavy	

ww = 60 - 69 Rain

60	Rain, not freezing, intermittent	} slight at time of observation
61	Rain, not freezing, continuous	
62	Rain, not freezing, intermittent	} moderate at time of observation
63	Rain, not freezing, continuous	
64	Rain, not freezing, intermittent	} heavy at time of observation
65	Rain, not freezing, continuous	
66	Rain, freezing, slight	
67	Rain, freezing, moderate or heavy	
68	Rain or drizzle and snow, slight	
69	Rain or drizzle and snow, moderate or heavy	

70 - 79 Solid precipitation not in showers

ww		
70	Intermittent fall of snow flakes	} slight at time of observation
71	Continuous fall of snow flakes	
72	Intermittent fall of snow flakes	} moderate at time of observation
73	Continuous fall of snow flakes	
74	Intermittent fall of snow flakes	} heavy at time of observation
75	Continuous fall of snow flakes	
76	Ice prisms (with or without fog)	
77	Snow grains (with or without fog)	
78	Isolated starlike snow crystals (with or without fog)	
79	Ice pellets, type (a)	

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

80	Rain shower(s), slight	
81	Rain shower(s), moderate or heavy	
82	Rain shower(s), violent	
83	Shower(s) of rain and snow mixed, slight	
84	Shower(s) of rain and snow mixed, moderate or heavy	
85	Snow shower(s), slight	
86	Snow shower(s), moderate or heavy	
87	Shower(s) of snow pellets or ice pellets, type (b), with or without rain	} - slight
88	or rain and snow mixed	
89	Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder	} - moderate or heavy
90		
91	Slight rain at time of observation	} thunderstorm during the preceding hour but not at time of observation
92	Moderate or heavy rain at time of observation	
93	Slight snow, or rain and snow mixed or hail at time of observation	
94	Moderate or heavy snow, or rain and snow mixed or hail at time of observation	} thunderstorm at time of observation
95	Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation	
96	Thunderstorm, slight or moderate, with hail at time of observation	
97	Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation	
98	Thunderstorm, combined with duststorm or sandstorm at time of observation	
99	Thunderstorm, heavy, with hail at time of observation	

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{1}{2}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11C.C.O. Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N.B.
04. Arctic Biological Station, St. Anne de Bellevue, P.Q.
05. Biological Station, St. John's Nfld.
06. Station de Biologie Marine, Grande Riviere, P.Q.
07. Canadian Hydrographic Service.
08. Naval Research Establishment, Dartmouth, N.S.
09. Pacific Naval Laboratory, Esquimalt, B.C.
10. Bedford Institute of Oceanography
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Inland Region, Oceanographic Research, Ottawa.
14. Institute of Oceanography, Dalhousie University.

SECTION III

Serial oceanographic data

GENERAL INFORMATION

Institute: Atlantic Oceanographic Group
Observation platform: CNAV "Sackville"
Vessel's cruising speed: 12 knots
Total number of stations occupied: 7
Anemometer height above sea level: 11 metres
Barometer readings: Aneroid Barometer (corrected)
Air temperature: Sling Psychrometer
Wet bulb temperature: Sling Psychrometer
Surface sea water temperature: Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003

C-REF-NO 007	YR 1963	DEPTH 91	WAVES 1 24X2	AIR T 06.0	VIS
CONS. NO 001	MONTH 12	MXSAMPD 01	WAVES 2 14X6	WET B 04.4	STN
LAT 44-240N	DAY 10	NO.DPTH 6	WND-DIR 240	WW-CODE 02	
LON 63-272W	HR 17.9	W-COLOR	WND-SPD 07	CLD-TPE 8	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 994.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
182	0000	072 B	31195		2442	14749
182	0010	0712	31130		2438	14746
182	0020	0715	31176		2441	14750
182	0030	0713	31164		2441	14750
182	0049	0714	31164		2441	14754
182	0079	0618	31617		2488	14726

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0720 B	31195		2442	14749	0000	00000	3516
0010	0712	31130		2438	14746	0036	00002	3556
0020	0715	31176		2441	14750	0071	00007	3526
0030	0713	31164		2441	14750	0107	00016	3534
0050	0702 D	3121 H		2446	14750	0177	00045	3488
0075	0634	3154 B		2480	14731	0261	00098	3161

C-REF-NO 007	YR 1963	DEPTH 155	WAVES 1 24X2	AIR T 05.9	VIS
CONS. NO 002	MONTH 12	MXSAMPD 01	WAVES 2 16X5	WET B 04.6	STN
LAT 44-160N	DAY 10	NO.DPTH 8	WND-DIR 240	WW-CODE 15	
LON 63-184W	HR 19.5	W-COLOR	WND-SPD 07	CLD-TPE 8	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 995.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	062	B			
199	0010	0614				
199	0019	0618				
199	0029	0615	B			
199	0048	0610				
199	0072	0398				
199	0097	0254				
199	0145	0330				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0620	B						
0010	0614							
0020	0618							
0030	0617	B						
0050	0595	B						
0075	0375							
0100	0258	D						
0125	0255	C						

C-REF-NO 007 YR 1963 DEPTH 265 WAVES 1 24X2 AIR T 05.5 VIS
 CONS. NO 003 MONTH 12 MXSAMPD 02 WAVES 2 16X5 WET B 05.0 STN
 LAT 43-530N DAY 10 NO.DPTH 10 WND-DIR 240 WW-CODE 01
 LON 62-515W HR 23.3 W-COLOR WND-SPD 09 CLD-TPE 8
 MARSD SQ 151 C/I 1801 W-TRNSP BARO 997.0 CLD-AMT 3 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
*240	0000	073 B	31357		2454	14755
*240	0010	0732	31330		2451	14757
*240	0020	0734	31330		2451	14759
*240	0030	0732	31329		2451	14760
*240	0049	0730	31338		2452	14762
*240	0074	0347	33274		2649	14635
237	0094	0404	33543		2665	14666
237	0141	0570	34172		2696	14751
237	0188	0660	34434		2705	14798
237	0240	0704	34612		2713	14826

*MULTIPLE CAST CONTINUED NEXT DAY

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0730 B	31357		2454	14755	0000	00000	3408
0010	0732	31330		2451	14757	0034	00002	3432
0020	0734	31330		2451	14759	0069	00007	3435
0030	0732	31329		2451	14760	0103	00016	3435
0050	0714 C	3141 I		2460	14757	0172	00044	3352
0075	0346 B	3330 C		2651	14635	0233	00080	1535
0100	0426	3363 B		2670	14678	0270	00113	1364
0125	0515 B	3398 E		2687	14723	0302	00150	1204
0150	0592	3424 B		2698	14762	0331	00191	1102
0175	0641	3439 C		2703	14788	0358	00236	1059
0200	0681 B	3454 I		2710	14810	0384	00286	1001
0225	0700	3460 D		2713	14822	0409	00340	0983

C-REF-NO 007 YR 1963 DEPTH 73 WAVES 1 24X2 AIR T 06.8 VIS
 CONS. NO 004 MONTH 12 MXSAMPD 01 WAVES 2 16X5 WET B 04.6 STN
 LAT 43-300N DAY 11 NO.DPTH 6 WND-DIR 240 WW-CODE 03
 LON 62-270W HR 03.1 W-COLOR WND-SPD 12 CLD-TPE 6
 MARSD SQ 151 C/I 1801 W-TRNSP BARO 998.0 CLD-AMT 5 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
034	0000	076 B	32136		2511	14776
034	0010	0761	32116		2509	14778
034	0020	0760 B	32148		2512	14780
034	0030	0761 B	32096		2507	14781
034	0050	0732	32226		2522	14775
034	0065	0520 B	32759		2590	14699

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0760 B	32136		2511	14776	0000	00000	2865
0010	0761	32116		2509	14778	0029	00001	2883
0020	0760 B	32148		2512	14780	0058	00006	2859
0030	0761 B	32096		2507	14781	0087	00013	2901
0050	0732	32226		2522	14775	0144	00037	2768

C-REF-NO 007	YR 1963	DEPTH 95	WAVES 1 24X2	AIR T 06.5	VIS
CONS. NO 005	MONTH 12	MXSAMPD 01	WAVES 2 16X2	WET B 04.4	STN
LAT 43-113N	DAY 11	NO.DPTH 6	WND-DIR 240	WW-CODE 01	
LON 62-050W	HR 06.1	W-COLOR	WND-SPD 12	CLD-TPE 6	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 999.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
065	0000	074 B	32196		2518	14769
065	0010	0739	32184		2517	14771
065	0020	0742	32194		2518	14773
065	0030	0738	32188		2518	14773
065	0049		32695			
065	0074	0395	32834		2609	14649

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0740 B	32196		2518	14769	0000	00000	2794
0010	0739	32184		2517	14771	0028	00001	2803
0020	0742	32194		2518	14773	0056	00006	2801
0030	0738	32188		2518	14773	0085	00013	2801
0050	0633 C	3253 I		2558	14739	0137	00034	2419
0075	0382	3285 C		2612	14644	0192	00068	1910

C-REF-NO 007	YR 1963	DEPTH 1076	WAVES 1 24X2	AIR T 06.2	VIS
CONS. NO 006	MONTH 12	MXSAMPD 08	WAVES 2 16X5	WET B 05.8	STN
LAT 42-510N	DAY 11	NO.DPTH 15	WND-DIR 240	WW-CODE 02	
LON 61-416W	HR 09.5	W-COLOR	WND-SPD 12	CLD-TPE 6	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1002.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
106	0000	072 B	31602		2474	14754
106	0010	0730	31944		2500	14764
106	0019	0733	31949		2500	14767
106	0029	0738 B	31997		2503	14771
106	0048	0724	32196		2520	14771
106	0072	0305	32870		2621	14611
106	0097	0207 B	33110		2648	14576
106	0145	0312 B	33711		2687	14638
106	0193	0668	34420		2703	14802
099	0346	0512	34691		2744	14768
099	0438	0456	34802		2759	14761
099	0530	0454	34864		2764	14777
099	0621	0435 B				
099	0712	0699 B	34655		2717	14903
099	0802	0732 B	34539		2703	14929

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0720 B	31602		2474	14754	0000	00000	3212
0010	0730	31944		2500	14764	0031	00002	2970
0020	0734	31952		2500	14767	0061	00006	2971
0030	0741 B	32002		2503	14772	0091	00014	2944
0050	0692 E	3225 D		2529	14759	0147	00037	2697
0075	0281 B	3291 C		2626	14602	0204	00071	1774
0100	0204 B	33143		2651	14575	0245	00108	1539
0125	0230 C	33443		2672	14595	0282	00150	1332
0150	0348 D	3379 B		2690	14655	0313	00194	1174
0175	0531 I	3417 E		2700	14741	0342	00242	1088
0200	0681 H	3447 G		2705	14809	0369	00293	1055
0225	0713 I	3461 I		2711	14827	0395	00350	0998
*0250	0720 I	3470 I		2718	14836	0419	00409	0939
*0300	0658 I	3477 I		2732	14820	0463	00533	0810
0400	0474	34761		2754	14762	0534	00784	0603
0500	0453 B	34853		2763	14771	0591	01045	0521
0600	0428 E	3481 E		2763	14777	0644	01346	0533
0700	0663 E	3468 B		2724	14887	0719	01857	0949
0800	0729 B	34543		2704	14928	0826	02685	1159

C-REF-NO 007	YR 1963	DEPTH C 3795	WAVES 1 27X3	AIR T 05.8	VIS
CONS. NO 007	MONTH 12	MXSAMPD 08	WAVES 2 17X5	WET B 04.7	STN
LAT 42-300N	DAY 11	NO.DPTH 15	WND-DIR 270	WW-CODE 80	
LON 61-200W	HR 13.6	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 151	C/I 1801	W-TRNSP	BARO 1005.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
161	0000	084 B	32295		2512	14809
161	0010	0842	32370		2517	14813
161	0020	0841	32368		2517	14814
161	0030	0840	32372		2518	14815
161	0049	0840	32368		2517	14818
161	0074	0814	32438		2527	14813
161	0099	0357 B	33194		2642	14642
161	0148	0585	34375		2710	14761
161	0197	0360 B				
145	0324	0500	34017		2692	14750
145	0367	0479	34446		2728	14754
145	0453	0474	34849		2761	14772
145	0627	0530 B	34429		2721	14818
145	0714	0517 B	34644		2739	14830
145	0800	0461 B	34827		2760	14824

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0840 B	32295		2512	14809	0000	00000	2856
0010	0842	32370		2517	14813	0028	00001	2805
0020	0841	32368		2517	14814	0057	00006	2807
0030	0840	32372		2518	14815	0085	00013	2804
0050	0843 B	3236 B		2516	14820	0141	00036	2818
0075	0796 C	3246 B		2531	14807	0211	00080	2682
0100	0356 D	33223		2644	14643	0265	00127	1605
0125	0414 I	3388 B		2690	14680	0300	00167	1168
0150	0579 B	3438 G		2711	14759	0327	00205	0980
0175	0479 I	3444 I		2728	14723	0349	00242	0821
0200	0359 C	3447 I		2743	14677	0368	00278	0680
0225	0359 I	3445 I		2741	14681	0386	00316	0693
*0250	0373 I	3440 I		2736	14690	0404	00361	0749
*0300	0445 I	3418 I		2711	14726	0448	00487	0995
0400	0473	3466 C		2746	14760	0532	00782	0677
0500	0490 C	3476 I		2752	14785	0598	01087	0633
0600	0522 C	3451 I		2728	14812	0674	01522	0869
0700	0521 B	3460 C		2736	14829	0759	02089	0814
0800	0461 B	34827		2760	14824	0830	02628	0582

PART II

by

CSS "Hudson"

(CODC Reference: 10-64-004)

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

and

FISHERIES RESEARCH BOARD OF CANADA

Scotian Shelf - Halifax Section

Ship:	CSS "Hudson"
Local cruise designation:	Hud - 3
Cruise period:	March 24 - 26, 1964
Observers:	T. R. Foote C. C. Cunningham E. A. Lewis

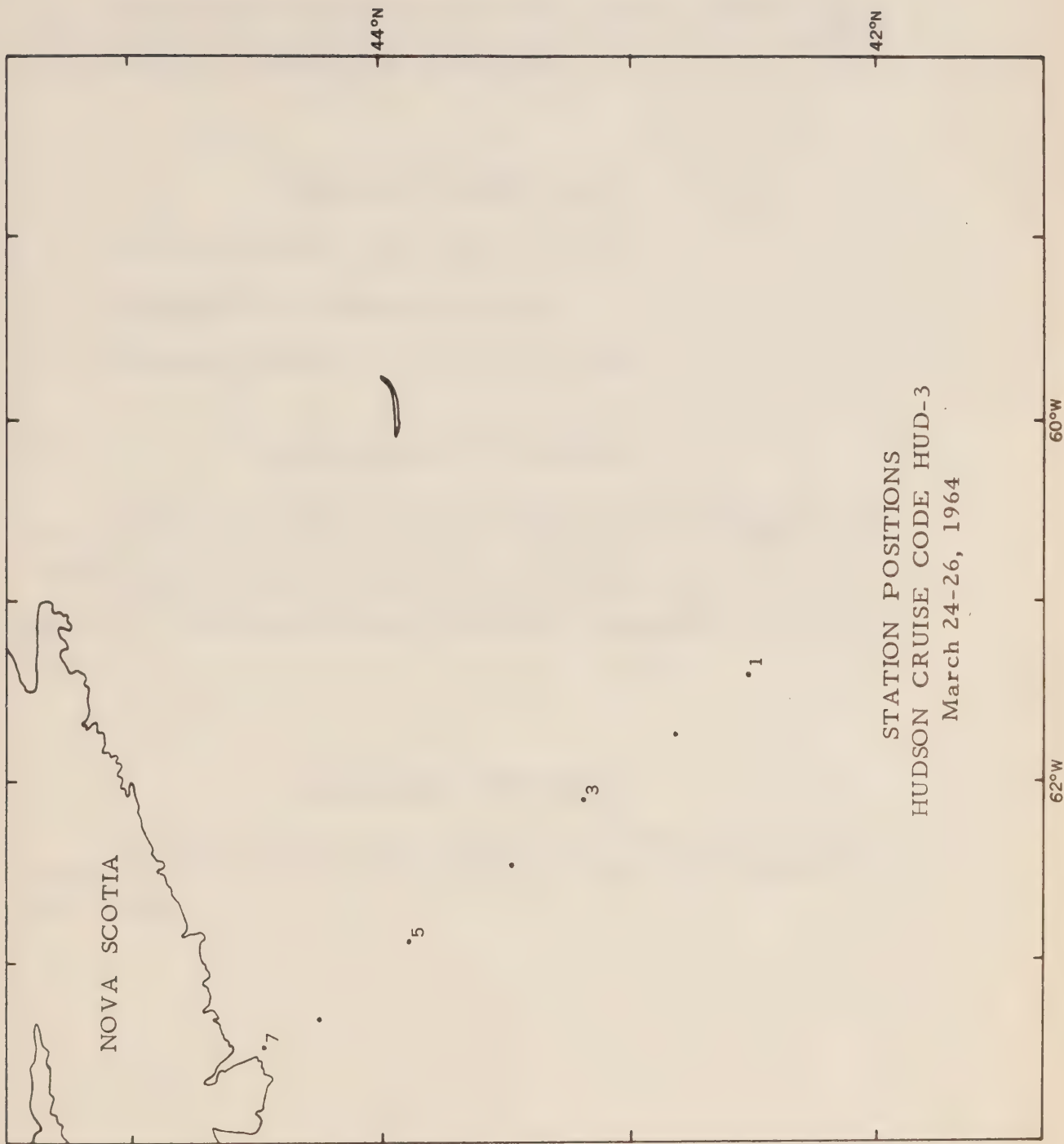
MARINE SCIENCES BRANCH
and
ATLANTIC OCEANOGRAPHIC GROUP

Bedford Institute of Oceanography, Dartmouth, N. S.

SECTION I

Description of data collection procedures





STATION POSITIONS
HUDSON CRUISE CODE HUD-3
March 24-26, 1964

INTRODUCTION

The purpose of this cruise was to carry out observations on the Halifax Section. This is usually done seasonally and is part of a program to assess water conditions on the Scotian Shelf.

EXTRACT OF CRUISE LOG

Sailed from Halifax , N.S. - March 24, 1964

Occupied seven oceanographic stations

Returned to Halifax, N.S. - March 26, 1964.

OBSERVATION PROCEDURES

Knudsen water bottles were used with Richter and Wiese protected thermometers to measure temperature at standard depths. Unprotected thermometers were used for depths below 200 metres. All temperatures were read by two observers. Surface samples and temperatures were obtained in a metal bucket using a thermometer graduated in 0.1° C intervals.

LABORATORY PROCEDURES

The salinity samples were processed on an NIO Salinity bridge at the Bedford Institute of Oceanography. Dissolved oxygen was determined at each station.

BATHYTHERMOGRAPH DATA

BT observations were taken at each station to a maximum depth of 275 metres (where applicable). Bathythermograph records were processed at the BT centre of the Bedford Institute of Oceanography.

PERSONNELAt Sea:

T. R. Foote
C. C. Cunningham
E. A. Lewis

Data Analyses:

Compilation of Data:	T. R. Foote C. C. Cunningham
Salinity Determinations:	M. E. MacLean
BT Processing:	T. A. Grant D. M. MacDonald

SECTION II

Description of the machine-generated data record

SEE SECTION II OF PART I

SECTION III

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Bedford Institute of Oceanography
<u>Observation platform:</u>	CSS "Hudson"
<u>Vessel's cruising speed:</u>	16 knots
<u>Total number of stations occupied:</u>	7
<u>Anemometer height above sea level:</u>	24 metres
<u>Barometer reading</u>	Aneroid Barometer (corrected)
<u>Air temperature</u>	Sling psychrometer
<u>Wet bulb temperature</u>	Sling Psychrometer
<u>Surface sea water temperature</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003

C-REF-NO 004	YR 1964	DEPTH 2578	WAVES 1 27X2	AIR T 03.1	VIS 8
CONS. NO 001	MONTH 3	MXSAMPD 10	WAVES 2 03X8	WET B 02.2	STN
LAT 42-320N	DAY 25	NO.DPTH 17	WND-DIR 220	WW-CODE 02	
LON 61-240W	HR 14.7	W-COLOR	WND-SPD 02	CLD-TPE 7	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1012.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
152	0000	017 B	33041		2645	14543
152	0010	0158	32958		2639	14538
152	0019	0156	32956		2639	14538
152	0029	0148	32943		2639	14536
152	0049	0148	32944		2639	14539
152	0073	0150	32985		2642	14545
152	0097	0244	33925		2710	14603
152	0146	0310	34371		2740	14646
152	0195	0348	34535		2749	14672
152	0243	0450	34793		2759	14727
152	0292	0486	34890		2763	14751
152	0391	0442	34889		2767	14749
158	0492	0428	34931		2772	14760
158	0592	0416	34944		2775	14772
158	0691	0413	34959		2776	14788
158	0791	0413	34976		2777	14804
158	0991	0397	34967		2778	14831

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0170 B	33041		2645	14543	0000	00000	1590
0010	0158	32958		2639	14538	0016	00001	1645
0020	0155	32955		2639	14538	0033	00003	1646
0030	0148	32942		2638	14536	0049	00008	1651
0050	0147	3294 B		2638	14539	0083	00021	1655
0075	0157	3306 F		2647	14549	0123	00047	1572
0100	0251	3399 F		2714	14607	0155	00075	0939
0125	0294 C	3432 I		2737	14635	0176	00099	0725
0150	0312	3439 B		2741	14648	0194	00124	0691
0175	0330 B	3448 E		2746	14661	0211	00152	0641
0200	0359	3456 B		2750	14678	0226	00182	0607
0225	0412 C	3470 C		2756	14707	0241	00214	0561
0250	0458	34814		2760	14732	0255	00248	0529
0300	0485 B	3489 B		2763	14752	0281	00321	0505
0400	0440	34892		2768	14750	0330	00497	0466
0500	0427	34933		2773	14761	0375	00706	0432
0600	0416	34945		2775	14773	0418	00949	0420
0700	0413	34961		2776	14789	0461	01231	0415
0800	0410	34972		2777	14805	0503	01554	0413

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
1000	0396	34966		2778	14832	0587	02337	0420

C-REF-NO 004	YR 1964	DEPTH 1024	WAVES 1 22X5	AIR T 03.9	VIS 8
CONS. NO 002	MONTH 3	MXSAMPD 09	WAVES 2 12X8	WET 8 03.1	STN
LAT 42-510N	DAY 25	NO.DPTH 17	WND-DIR 220	WW-CODE 61	
LON 61-440W	HR 18.3	W-COLOR	WND-SPD 10	CLD-TPE 8	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
188	0000	008 B	32749		2627	14498
188	0010	0074	32735		2626	14497
188	0020	0073	32739		2627	14498
188	0030	0068	32758		2629	14498
188	0050	0067	32795		2632	14501
188	0075	0060	32826		2634	14502
188	0099	0133	33211		2661	14545
188	0149	0225	33795		2701	14602
188	0199	0372	34419		2737	14682
188	0249	0320	34450		2745	14668
188	0298	0339	34553		2751	14686
188	0398	0356	34673		2759	14711
192	0500	0380	34806		2767	14740
192	0600	0397	34874		2771	14765
192	0700	0393	34882		2772	14780
192	0800	0396	34917		2775	14798
192	0900	0395	34920		2775	14814

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0080 B	32749		2627	14498	0000	00000	1758
0010	0074	32735		2626	14497	0018	00001	1765
0020	0073	32739		2627	14498	0035	00004	1761
0030	0068	32758		2629	14498	0053	00008	1744
0050	0067	32795		2632	14501	0088	00022	1715
0075	0060	32826		2634	14502	0131	00050	1687
0100	0135	33224		2662	14546	0170	00085	1429
0125	0182 C	3353 E		2683	14575	0204	00123	1230
0150	0229	33810		2702	14604	0232	00163	1055
0175	0310 E	3415 I		2722	14648	0257	00204	0867
0200	0372	34422		2738	14682	0277	00242	0726
0225	0353 F	3447 I		2743	14678	0294	00281	0676
0250	0320	34452		2745	14668	0311	00322	0658
0300	0339	34556		2752	14686	0343	00411	0602
0400	0356	34676		2759	14712	0400	00616	0538
0500	0380	34806		2767	14740	0452	00851	0474
0600	0397	34874		2771	14765	0498	01115	0451
0700	0393	34882		2772	14780	0544	01420	0450
0800	0396	34917		2775	14798	0589	01766	0437

C-REF-NO 004	YR 1964	DEPTH 95	WAVES 1 24X3	AIR T 02.8	VIS 6
CONS. NO 003	MONTH 3	MXSAMPD 01	WAVES 2 24X5	WET B 02.2	STN
LAT 43-110N	DAY 25	NO.DPTH 7	WND-DIR 240	WW-CODE 61	
LON 62-060W	HR 22.0	W-COLOR	WND-SPD 10	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1006.9	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
222	0000	013 B	32664		2617	14520
222	0010	0127	32639		2616	14519
222	0020	0126	32648		2616	14521
222	0030	0126	32644		2616	14522
222	0050	0129	32677		2618	14527
222	0075	0159	33103		2651	14551
222	0090	0198	33451	696	2676	14575

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0130 B	32664		2617	14520	0000	00000	1851
0010	0127	32639		2616	14519	0019	00001	1868
0020	0126	32648		2616	14521	0037	00004	1861
0030	0126	32644		2616	14522	0056	00009	1864
0050	0129	32677		2618	14527	0094	00024	1841
0075	0159	33103		2651	14551	0136	00051	1537

C-REF-NO 004 YR 1964 DEPTH 77 WAVES 1 25X2 AIR T 03.6 VIS 7
 CONS. NO 004 MONTH 3 MXSAMPD 01 WAVES 2 36X3 WET B 02.5 STN
 LAT 43-285N DAY 26 NO.DPTH 6 WND-DIR 290 WW-CODE 63
 LON 62-270W HR 00.4 W-COLOR WND-SPD 02 CLD-TPE 4
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1006.0 CLD-AMT 9 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
007	0000	016 B	32469		2600	14530
007	0010	0154	32517		2604	14530
007	0020	0152	32498		2603	14530
007	0030	0152	32502		2603	14532
007	0050	0157	32522		2604	14538
007	0075	0328	33301	625	2653	14627

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0160 B	32469		2600	14530	0000	00000	2018
0010	0154	32517		2604	14530	0020	00001	1978
0020	0152	32498		2603	14530	0040	00004	1991
0030	0152	32502		2603	14532	0060	00009	1988
0050	0157	32522		2604	14538	0100	00026	1976
0075	0328	33301		2653	14627	0144	00053	1519

C-REF-NO 004	YR 1964	DEPTH 256	WAVES 1 29X2	AIR T 03.9	VIS 6
CONS. NO 005	MONTH 3	MXSAMPD 02	WAVES 2 29X3	WET B 02.5	STN
LAT 43-530N	DAY 26	NO.DPTH 10	WND-DIR 290	WW-CODE 63	
LOX 62-530W	HR 03.4	W-COLOR	WND-SPD 02	CLD-TPE 4	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1006.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
038	0000	008 B	32340		2594	14493
038	0010	0080	32340	799	2594	14494
038	0020	0092	32374	795	2596	14502
038	0030	0108	32391	785	2597	14511
038	0050	0119	32411	775	2598	14519
038	0075	0266	32953	663	2630	14596
038	0100	0498	33883	502	2681	14711
038	0150	0606	34414	449	2710	14770
038	0200	0553	34507	468	2724	14758
038	0250	0510	34543	487	2732	14749

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0080 B	32340		2594	14493	0000	00000	2069
0010	0080	32340		2594	14494	0021	00001	2069
0020	0092	32374		2596	14502	0042	00004	2050
0030	0108	32391		2597	14511	0062	00010	2046
0050	0119	32411		2598	14519	0103	00026	2037
0075	0266	32953		2630	14596	0151	00056	1729
0100	0498	33883		2681	14711	0188	00089	1253
0125	0592 G	3429 I		2702	14759	0217	00123	1063
0150	0606	34414		2710	14770	0243	00159	0989
0175	0589 D	3449 E		2719	14768	0267	00199	0914
0200	0553	34507		2724	14758	0290	00242	0862
0225	0555 F	3459 I		2730	14764	0311	00288	0807
0250	0510	34543		2732	14749	0331	00337	0790

C-REF-NO 004	YR 1964	DEPTH 165	WAVES 1 49XX	AIR T 00.9	VIS 0
CONS. NO 006	MONTH 3	MXSAMPD 02	WAVES 2 49XX	WET B 00.8	STN
LAT 44-150N	DAY 26	NO.DPTH 9	WND-DIR 260	WW-CODE 45	
LON 63-190W	HR 06.4	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1006.4	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
068	0000	-008 B	31831		2560	14412
068	0010	-0080	31854		2562	14414
068	0020	-0080	31859		2563	14415
068	0030	-0077	31864		2563	14419
068	0050	-0085	31883		2565	14418
068	0075	-0060	32023		2575	14436
068	0100	-0025	32196		2588	14459
068	0150	0080	32483		2606	14519
068	0160	0122	32624	699 B	2615	14542

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	-0080 B	31831		2560	14412	0000	00000	2392
0010	-0080	31854		2562	14414	0024	00001	2373
0020	-0080	31859		2563	14415	0048	00005	2369
0030	-0077	31864		2563	14419	0072	00011	2365
0050	-0085	31883		2565	14418	0119	00030	2347
0075	-0060	32023		2575	14436	0177	00067	2246
0100	-0025	32196		2588	14459	0232	00117	2126
0125	0014 C	3230 I		2595	14482	0285	00177	2062
0150	0080	32483		2606	14519	0335	00249	1958

C-REF-NO 004	YR 1964	DEPTH	82	WAVES 1 49X0	AIR T 00.0	VIS 0
CONS. NO 007	MONTH 3	MXSAMPD	01	WAVES 2 49XX	WET B -00.5	STN
LAT 44-276N	DAY 26	NO.DPTH	6	WND-DIR 270	WW-CODE 45	
LON 63-280W	HR 08.1	W-COLOR		WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP		BARO 1007.8	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
084	0000	-011 B	31376		2525	14391
084	0010	-0122	31457		2531	14388
084	0020	-0122	31553		2539	14391
084	0030	-0120	31586		2542	14395
084	0050	-0119	31613		2544	14399
084	0075	-0114	31642	821	2546	14406

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	-0110 B	31376		2525	14391	0000	00000	2733
0010	-0122	31457		2531	14388	0027	00001	2667
0020	-0122	31553		2539	14391	0054	00005	2592
0030	-0120	31586		2542	14394	0080	00012	2567
0050	-0119	31613		2544	14399	0131	00033	2544
0075	-0114	31642		2546	14406	0195	00074	2521

PART III

by

CCS "Kapuskasing"

(CODC Reference: 10-64-005)

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

Scotian Shelf (Part III)

Ship: CSS "Kapuskasing"

Local cruise designation: K - 1

Cruise period: April 6-21, 1964 - Phase 1
April 21 - May 5, 1964 - Phase 2

Observers: Dr. L. H. King
Dr. J. I. Marlowe
Mr. J. Y. Dugas

GEOLOGICAL SURVEY OF CANADA

Bedford Institute of Oceanography, Dartmouth, N. S.

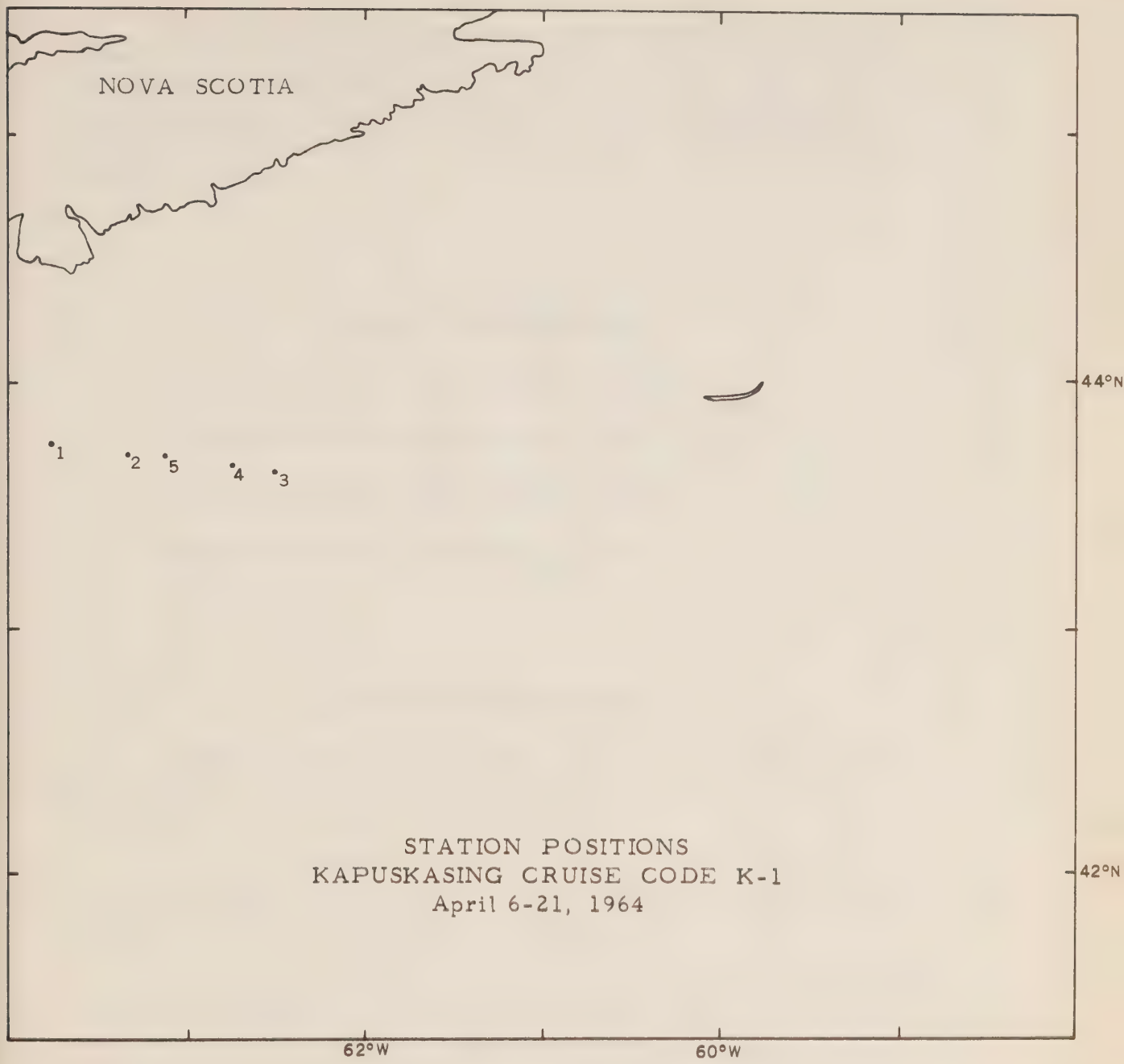
SECTION I

Description of data collection procedures

"KAPUSKASING"



Dept. National Defence



INTRODUCTION

The purposes of the cruise were: to carry out a study of marine sediment on the Scotian Shelf in the vicinity of Emerald and Sambro Banks; to complete a geological sampling program centred on the gully, a submarine canyon at the east end of Sable Island; and to occupy five oceanographic stations across the area to give a complete section in terms of temperature, salinity and oxygen.

EXTRACT OF CRUISE LOG

Sailed from Halifax, N. S. on April 6, 1964

Returned to Halifax, N. S. on May 1, 1964

Sailed from Halifax, N. S. on May 3, 1964

Returned to Halifax, N. S. on May 5, 1964

OBSERVATION PROCEDURES

On phase 1 a total of 133 stations was occupied to obtain bottom grab samples. A five mile grid system was used so that an area of approximately 2,000 square miles was covered.

Five oceanographic stations were occupied using Richter and Wiese and Yoshino reversing thermometers. Observations were made at standard depths, the deepest down to 1000 metres.

On phase 2 a series of methods were used to obtain bottom samples. Coring and bottom grabs provided 56 samples, and a day was devoted to dredge trawling. This dredge although in an experimental stage proved moderately successful.

LABORATORY PROCEDURES

Salinities were analyzed at Bedford Institute of Oceanography using an NIO conductivity bridge. Dissolved oxygen was determined at each station.

BATHYTHERMOGRAPH DATA

BT observations were taken at each station to a maximum depth of 275 metres (where applicable). BT records were processed at the BT data centre of the Bedford Institute of Oceanography.

PERSONNEL

At Sea:

L. H. King Scientist in charge - Phase I

J. Marlowe Scientist in charge - Phase II

J. Y. Dugas

Data Analyses:

Compilation of Data: J. Y. Dugas

Salinity determination: M. E. MacLean

BT Processing: T. A. Grant
D. M. MacDonald

SECTION II

Description of the machine-generated data record

SEE SECTION II OF PART I

SECTION III

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Bedford Institute of Oceanography
<u>Observation platform:</u>	CSS "Kapuskasing"
<u>Vessel's cruising speed:</u>	12 knots
<u>Total number stations occupied:</u>	5
<u>Barometer readings</u>	Aneroid Barometer (corrected)
<u>Air temperature</u>	Sling Psychrometer
<u>Wet bulb temperature</u>	Sling Psychrometer
<u>Surface sea water temperature</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003

C-REF-NO 005	YR 1964	DEPTH 241	WAVES 1 22X0	AIR T 00.0	VIS 0
CONS. NO 001	MONTH 4	MXSAMPD 02	WAVES 2 18X1	WET B -01.0	STN 052
LAT 43-450N	DAY 13	NO.DPTH 10	WNO-DIR 220	WW-CODE 45	
LON 63-450W	HR 00.2	W-COLOR	WNO-FCE 01	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1036.1	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
002	0000	012 B	31595	902	2532	14500
002	0010	-0022	31603	897	2540	14437
002	0020		31609	886		
002	0030	-0024	31621	879	2542	14440
002	0050	0012	32099	838	2578	14466
002	0075	0070	32468	771	2605	14502
002	0100	0381	33404	564	2656	14655
002	0150	0608	34229	420	2696	14768
002	0200	0645	34437	390	2707	14794
002	0235	0580	34362	437	2710	14773

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0120 B	31595	902	2532	14500	0000	00000	2659
0010	-0022	31603	897	2540	14437	0026	00001	2586
0020	-0049 G	31609	886	2541	14426	0052	00005	2571
0030	-0024	31621	879	2542	14440	0078	00012	2570
0050	0012	32099	838	2578	14466	0126	00031	2218
0075	0070	32468	771	2605	14502	0179	00065	1965
0100	0381	33404	564	2656	14655	0223	00103	1492
0125	0539 G	3394 I	462 B	2681	14733	0257	00143	1258
0150	0608	34229	420	2696	14768	0287	00185	1130
0175	0648	3440 D	391	2703	14791	0315	00231	1060
0200	0645	34437	390	2707	14794	0341	00281	1029
0225	0609	3442 C	418	2710	14784	0367	00337	1000

C-REF-NO 005 YR 1964 DEPTH 92 WAVES 1 32X0 AIR T 01.5 VIS 1
 CONS. NO 002 MONTH 4 MXSAMPD 01 WAVES 2 18X1 WET B -01.7 STN 056
 LAT 43-430N DAY 13 NO.DPTH 6 WND-DIR 320 WW-CODE 45
 LON 63-200W HR 13.4 W-COLOR WND-FCE 01 CLD-TPE X
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1038.1 CLD-AMT 9 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
134	0000	016 B	31577	951	2528	14518
134	0010	0122	31498	947	2524	14502
134	0020	0002	31586	907	2538	14450
134	0030	0004	31962	838	2568	14458
134	0050	0050	32324	765	2595	14487
134	0075	0176	32739	684	2620	14553

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0160 B	31577	951	2528	14518	0000	00000	2696
0010	0122	31498	947	2524	14502	0027	00001	2734
0020	0002	31586	907	2538	14450	0054	00006	2608
0030	0004	31962	838	2568	14458	0079	00012	2320
0050	0050	32324	765	2595	14487	0123	00030	2065
0075	0176	32739	684	2620	14553	0172	00061	1824

C-REF-NO 005 YR 1964 DEPTH 73 WAVES 1 00X0 AIR T -01.0 VIS 1
 CONS. NO 003 MONTH 4 MXSAMPD 01 WAVES 2 18X1 WET B -01.0 STN 065
 LAT 43-385N DAY 13 NO.DPTH 6 WND-DIR CALM WW-CODE 02
 LON 62-300W HR 21.3 W-COLOR WND-FCE 00 CLD-TPE
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1038.1 CLD-AMT 0 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
213	0000	029 B	31844	942	2540	14579
213	0010	0090	31949	926	2562	14493
213	0020	0074	31958	899	2564	14488
213	0030	0071	31968	885	2565	14488
213	0050	0072	32298	769	2591	14497
213	0065	0168	32575	731	2608	14546

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0290 B	31844	942	2540	14579	0000	00000	2585
0010	0090	31949	926	2562	14493	0025	00001	2373
0020	0074	31958	899	2564	14488	0049	00005	2357
0030	0071	31968	885	2565	14488	0072	00011	2348
0050	0072	32298	769	2591	14497	0117	00029	2096

C-REF-NO 005 YR 1964 DEPTH 173 WAVES 1 00X0 AIR T -00.5 VIS 1
 CONS. NO 004 MONTH 4 MXSAMPD 01 WAVES 2 18X1 WET B -00.5 STN 067
 LAT 43-400N DAY 13 NO.DPTH 8 WND-DIR CALM WW-CODE 47
 LON 62-440W HR 23.1 W-COLOR WND-FCE 00 CLD-TPE X
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1038.1 CLD-AMT 9 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
231	0000	028 B	31584	942	2520	14571
231	0010	0054	31582		2535	14472
231	0020	0010	31585	932	2537	14453
231	0030	-0003	31616	888	2540	14449
231	0050	0043	32115	828	2578	14481
231	0075	0118	32554	712	2609	14525
231	0100	0220	32863	649	2627	14579
231	0150	0361	33877	574	2695	14662

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0280 B	31584	942	2520	14571	0000	00000	2774
0010	0054	31582	936	2535	14472	0027	00001	2634
0020	0010	31585	932	2537	14453	0054	00005	2612
0030	-0003	31616	888	2540	14449	0080	00012	2582
0050	0043	32115	828	2578	14481	0128	00032	2221
0075	0118	32554	712	2609	14525	0180	00065	1927
0100	0220	32863	649	2627	14579	0227	00106	1763
0125	0286 C	3339 I	592	2663	14619	0267	00152	1421
0150	0361	33877	574	2695	14662	0299	00196	1121

C-REF-NO 005 YR 1964 DEPTH 273 WAVES 1 14X0 AIR T 01.5 VIS B
 CONS. NO 005 MONTH 4 MXSAMPD 02 WAVES 2 14X1 WET B 01.0 STN 070
 LAT 43-425N DAY 14 NO.DPTH 10 WND-DIR 140 WW-CODE 01
 LON 63-060W HR 11.0 W-COLOR WND-FCE 01 CLD-TPE
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1037.1 CLD-AMT 0 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
114	0000	014 B	31316	983	2509	14505
114	0010	0024	31553	961	2534	14458
114	0020	-0021	31624	888	2542	14440
114	0030	-0033	31998	803	2572	14441
114	0050	0088	32420	759	2600	14505
114	0075	0280	33090	616	2640	14604
110	0100	0428	33584	529	2665	14678
110	0150	0558	34215	469	2701	14748
110	0200	0372	34076	574	2710	14677
110	0250	0527	34459	477	2724	14755

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0140 B	31316	983	2509	14505	0000	00000	2883
0010	0024	31553	961	2534	14458	0028	00001	2643
0020	-0021	31624	888	2542	14440	0054	00005	2569
0030	-0033	31998	803	2572	14441	0078	00012	2278
0050	0088	32420	759	2600	14505	0122	00029	2012
0075	0280	33090	616	2640	14604	0168	00058	1637
0100	0428	33584	529	2665	14678	0206	00092	1403
0125	0527 B	3398 D	479	2686	14728	0239	00130	1217
0150	0558	34215	469	2701	14748	0268	00170	1079
0175	0463 I	3416 I	524 C	2707	14713	0294	00214	1015
0200	0372	34076	574	2710	14677	0319	00263	0986
0225	0503 I	3439 I	497 E	2721	14740	0343	00314	0893
0250	0527	34459	477	2724	14755	0365	00369	0873

PART IV

by

CNAV "Sackville"

(CODC Reference: 14-64-003)

DALHOUSIE UNIVERSITY

and

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

SCOTIAN SHELF - HALIFAX SECTION

Ship:	CNAV "Sackville"
Local cruise designation:	S-80
Cruise period:	August 31 - September 9, 1964
Observers:	J. E. Blanchard
	M. E. MacLean
	N. Silverberg
	A. Pike

INSTITUTE OF OCEANOGRAPHY

and

MARINE SCIENCES BRANCH

Bedford Institute of Oceanography, Dartmouth, N. S.

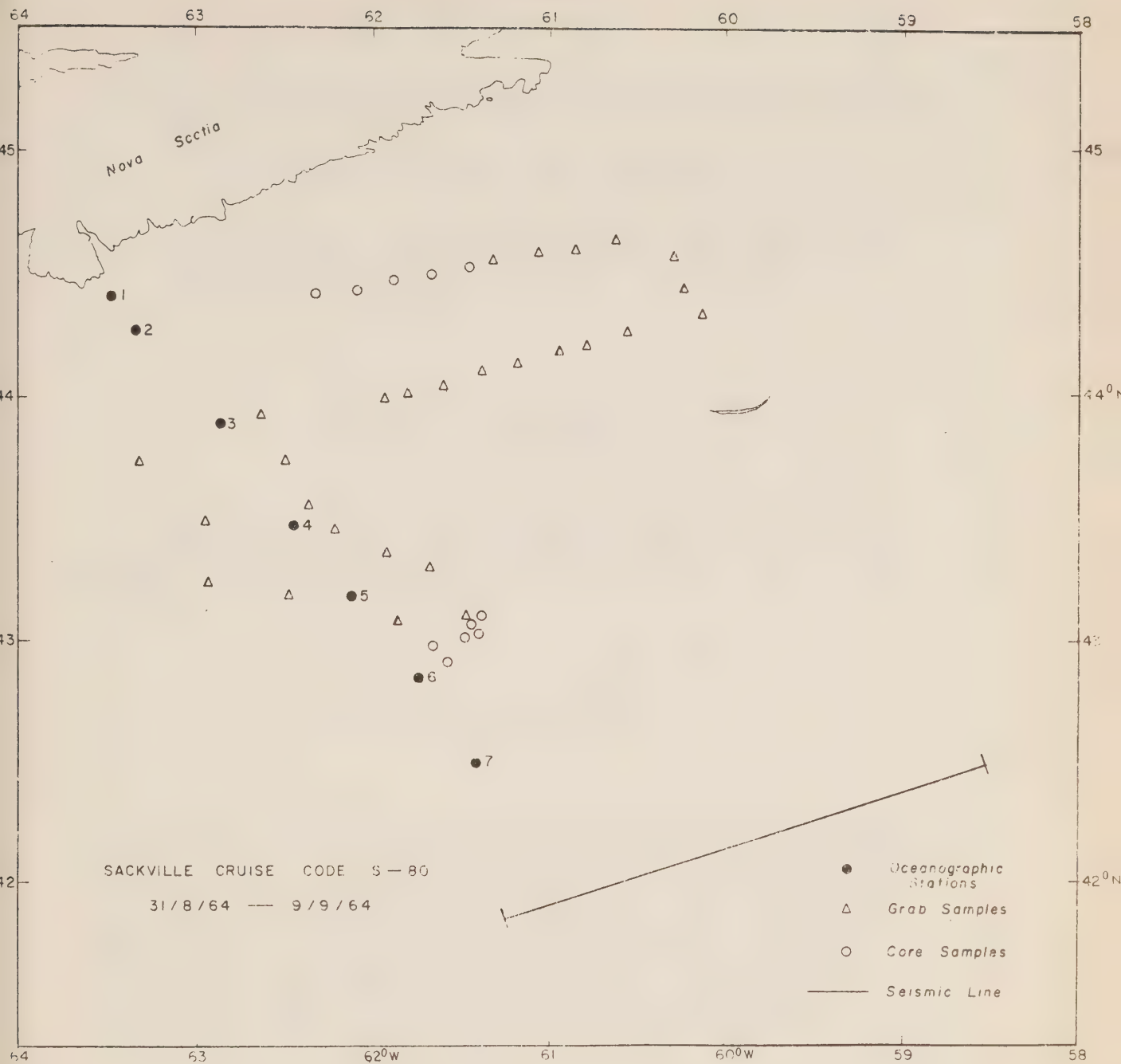
SECTION I

Description of data collection procedures

"SACKVILLE"



Fisheries Research Board



INTRODUCTION

The purposes of this cruise were:

- 1) To investigate the nature of the crust of the earth at the foot of the Continental Slope off Sable Island.
- 2) To collect geological samples on the Scotian Shelf and Slope.
- 3) To monitor a line of oceanographic stations on the Scotian Shelf (Halifax Section). The data collected on these stations are reported in this Data Record.

EXTRACT FROM CRUISE LOG

Sailed from Halifax, N. S. - August 31, 1964. Carried out first two purposes of cruise and on the way back to Halifax occupied the Halifax Section, arriving in Halifax on September 9, 1964.

OBSERVATION PROCEDURES

The oceanographic observations were carried out using Knudsen water bottles, with Richter and Wiese and Yoshino protected thermometers to measure temperatures of samples at depth. An unprotected reversing thermometer was used at depths below 500 metres. All thermometers were read by two observers. Surface temperatures and samples were obtained using a plastic bucket, temperatures were measured using a thermometer graduated to 0.1°C . Salinity samples were collected in 8 oz. medicine bottles, sealed with a poly-cone-lined screw cap.

LABORATORY PROCEDURES

Salinity determinations were made on a NIO salinometer at the Bedford Institute of Oceanography. Temperatures, depths, positions, and meteorological data were corrected and checked.

BATHYTHERMOGRAPH DATA

A total of 7 bathythermographs were taken; one at each oceanographic station.

PERSONNELAt Sea:

J. E. Blanchard
M. E. MacLean
N. Silverberg
A. Pike

Data Analyses

Compilation of Data: T. A. Holler
G. B. Taylor

Salinity Determinations: M. E. MacLean

BT Processing: T. A. Grant
D. M. MacDonald

SECTION II

Description of the machine-generated data record

SEE SECTION II OF PART I

SECTION III

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Dalhousie University
<u>Observation platform:</u>	CNAV "Sackville"
<u>Vessel's cruising speed:</u>	12 knots
<u>Total number stations occupied:</u>	7
<u>Anemometer height above sea level</u>	11 metres
<u>Barometer readings</u>	Aneroid Barometer (corrected)
<u>Air temperature</u>	Sling Psychrometer
<u>Wet bulb temperature</u>	Sling Psychrometer
<u>Surface sea water temperature</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.03
Salinity	0.003

C-REF-NO 003	YR 1964	DEPTH 2761	WAVES 1	XX	AIR T 18.6	VIS
CONS. NO 001	MONTH 9	MXSAMPD 20	WAVES 2	XX	WET B 17.0	STN 007
LAT 42-318N	DAY 09	NO.DPTH 15	WND-DIR 200	WW-CODE		
LON 61-240W	HR 01.4	W-COLOR	WND-SPD 07	CLD-TPE		
MARSD SQ 151	C/I 1814	W-TRNSP	BARO 1002.2	CLD-AMT		HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
018	0000	188 B	33371		2385	15169
018	0010	1898	33276		2373	15174
018	0020	1900	33399		2382	15178
018	0030	1506 B	33004		2444	15056
018	0050	0625 B	33191		2612	14745
018	0075	0398 B	33489		2661	14660
018	0100	0497	34054		2695	14713
018	0149	0616 B	34616		2725	14777
018	0199	0666 D	34840		2736	14808
014	0299	0501 B	34752		2750	14756
014	0497	0503 C	34987		2768	14793
014	0697	0433	34990		2776	14797
014	0996	0402	34947		2776	14834
014	1493	0371	34927		2778	14904
014	1989	0354	34942		2781	14980

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1880 B	33371		2385	15169	0000	00000	4064
0010	1898	33276		2373	15174	0041	00002	4179
0020	1900	33399		2382	15178	0083	00009	4098
0030	1506 B	33004		2444	15056	0121	00018	3506
0050	0625 B	33191		2612	14745	0176	00039	1912
0075	0398 B	33489		2661	14660	0218	00065	1443
0100	0497	34054		2695	14713	0250	00094	1124
0125	0568	3441 E		2715	14751	0276	00123	0945
0150	0618 B	34623		2725	14778	0299	00155	0848
0175	0652 B	3477 C		2732	14797	0320	00190	0790
0200	0665 D	34841		2736	14807	0339	00227	0755
0225	0635 F	3485 I		2741	14800	0358	00267	0716
*0250	0597 G	3483 I		2744	14788	0375	00310	0681
0300	0501 B	34753		2750	14756	0408	00403	0629
0400	0479 G	3485 I		2760	14765	0467	00613	0541
0500	0502 C	34988		2768	14793	0519	00850	0479
0600	0469 B	3501 C		2774	14796	0565	01111	0438
0700	0432	34990		2776	14798	0608	01400	0417
0800	0417	34977		2777	14808	0651	01725	0417
1000	0402	34947		2776	14834	0737	02533	0441
1200	0387	34933		2777	14861	0828	03559	0451

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
1500	0369	34922		2778	14904	0967	05496	0462
2000	0354	34943		2781	14982	1203	09766	0468

C-REF-NO 003	YR 1964	DEPTH 1060	WAVES 1	XX	AIR T 17.3	VIS
CONS. NO 002	MONTH 9	MXSAMPD 09	WAVES 2	XX	WET B 16.4	STN 006
LAT 42-510N	DAY 09	NO.DPTH 13	WND-DIR 230	WW-CODE		
LON 61-440W	HR 06.1	W-COLOR	WND-SPD 07	CLD-TPE		
MARSD SQ 151	C/I 1814	W-TRNSP	BARO 1002.1	CLD-AMT		HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
066	0000	158 B	31858		2340	15061
066	0010	1239	32142		2432	14954
066	0020	0168	32796		2625	14542
066	0030	0133	32905		2636	14529
066	0055	0402 B	33525		2663	14659
066	0070	0846	34659		2696	14854
066	0100	0845	34652		2695	14858
066	0150	0880	34732		2696	14881
061	0200		34839			
061	0300	0604 C	34708		2734	14798
061	0500	0416 B	34806		2764	14755
061	0700	0420	34919		2772	14791
061	0900	0402 B	34919		2774	14817

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1580 B	31858		2340	15061	0000	00000	4491
0010	1239	32142		2432	14954	0041	00002	3616
0020	0168	32796		2625	14542	0068	00006	1775
0030	0133	32905		2636	14529	0085	00010	1670
0050	0304 B	3332 I		2656	14613	0117	00023	1485
0075	0886 I	3476 I		2697	14871	0150	00043	1107
0100	0845	34652		2695	14858	0178	00068	1131
0125	0864 B	34683		2695	14870	0206	00102	1140
0150	0880	34732		2696	14881	0235	00142	1134
0175	0850 E	3479 B		2705	14874	0263	00188	1049
0200	0813 I	34839		2715	14865	0288	00237	0964
0225	0770 I	3482 F		2720	14853	0312	00288	0918
0250	0721 I	3480 H		2725	14837	0334	00343	0873
0300	0604 C	34708		2734	14798	0376	00461	0789
0400	0485 B	3473 G		2750	14766	0448	00717	0642
0500	0416 B	34806		2764	14755	0507	00984	0514
0600	0407 C	3487 B		2770	14769	0556	01263	0467
0700	0420	34919		2772	14791	0603	01574	0454
0800	0383 E	3491 C		2776	14792	0647	01916	0424

C-REF-NO 003	YR 1964	DEPTH 95	WAVES 1 XX	AIR T 16.5	VIS
CONS. NO 003	MONTH 9	MXSAMPD 01	WAVES 2 XX	WET B 15.5	STN 005
LAT 43-110N	DAY 09	NO.DPTH 7	WND-DIR 230	WW-CODE	
LON 62-070W	HR 09.1	W-COLOR	WND-SPD 07	CLD-TPE	
MARSD SQ 151	C/I 1814	W-TRNSP	BARO 1001.8	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
091	0000	162 B	31102		2273	15064
091	0010	1602	31810		2332	15069
091	0020	1392	31964		2388	15005
091	0030	0957	32457		2506	14860
091	0050	0290 B	33057		2637	14604
091	0075	0378 B	33559		2669	14652
091	0090	0561	33991		2683	14736

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1620 B	31102		2273	15064	0000	00000	5129
0010	1602	31810		2332	15069	0049	00002	4575
0020	1392	31964		2388	15005	0092	00009	4036
0030	0957	32457		2506	14860	0127	00017	2914
0050	0290 B	33057		2637	14604	0173	00035	1669
0075	0378 B	33559		2669	14652	0211	00059	1371

C-REF-NO 003	YR 1964	DEPTH 76	WAVES 1 XX	AIR T 16.5	VIS
CONS. NO 004	MONTH 9	MXSAMPD 01	WAVES 2 XX	WET B 14.8	STN 004
LAT 43-285N	DAY 09	NO.DPTH 6	WND-DIR 240	WW-CODE	
LON 62-270W	HR 11.5	W-COLOR	WND-SPD 07	CLD-TPE	
MARSD SQ 151	C/I 1814	W-TRNSP	BARO 1001.6	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
115	0000	165 B	31848		2324	15082
115	0009	1648	31914		2329	15084
115	0018	1255	32236		2436	14962
115	0027	0617	32592		2565	14730
115	0045	0295 B	32908		2624	14603
115	0068	0371 B	33370		2654	14646

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1650 B	31848		2324	15082	0000	00000	4648
0010	1620	3194 B		2338	15076	0046	00002	4517
0020	1110 E	3232 B		2469	14913	0085	00008	3262
0030	0508 G	3266 D		2584	14687	0112	00015	2173
0050	0092 I	3311 I		2655	14517	0149	00029	1490

C-REF-NO 003 YR 1964 DEPTH 265 WAVES 1 XX AIR T 16.5 VIS
 CONS. NO 005 MONTH 9 MXSAMPD 02 WAVES 2 XX WET B 15.6 STN 003
 LAT 43-530N DAY 09 NO.DPTH 10 WND-DIR 270 WW-CODE
 LON 62-520W HR 14.8 W-COLOR WND-SPD 07 CLD-TPE
 MARSD SQ 151 C/I 1814 W-TRNSP BARO CLD-AMT HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
148	0000	166 B	31500		2295	15081
148	0009	1653	31493		2296	15080
148	0019	1617	31745		2323	15074
148	0028	0860	32356		2513	14822
148	0047	0317 B	32779		2612	14611
148	0070	0302	33187		2646	14614
148	0094	0482	33776		2675	14702
148	0141	0636	34421		2707	14781
148	0188	0574 B	34433		2716	14764
148	0235	0513 C	34376		2719	14746

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1660 B	31500		2295	15081	0000	00000	4924
0010	1669 D	31502		2293	15086	0050	00003	4945
0020	1542 F	3181 D		2345	15051	0097	00010	4451
0030	0758 E	3243 F		2534	14784	0132	00018	2647
0050	0290 D	3283 B		2619	14600	0178	00036	1840
0075	0334 C	3331 C		2653	14630	0220	00063	1518
0100	0515	33895		2680	14718	0255	00094	1263
0125	0610	34275		2699	14766	0285	00128	1095
0150	0632 B	3445 E		2710	14781	0311	00165	0995
0175	0602 C	3447 F		2715	14773	0335	00205	0950
0200	0596 G	3452 I		2720	14776	0359	00250	0903
0225	0543 C	3444 F		2720	14757	0382	00300	0904

C-REF-NO 003 YR 1964 DEPTH 151 WAVES 1 XX AIR T 17.4 VIS
 CONS. NO 006 MONTH 9 MXSAMPD 01 WAVES 2 XX WET B 16.3 STN 002
 LAT 44-160N DAY 09 NO.DPTH 8 WND-DIR 300 WW-CODE
 LON 63-190W HR 17.8 W-COLOR WND-SPD 02 CLD-TPE
 MARSD SQ 151 C/I 1814 W-TRNSP BARO CLD-AMT HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
178	0000	156 B	30758		2260	15041
178	0010	1519	30763		2269	15030
178	0020	1170	31072		2362	14918
178	0030	0956	31818		2456	14852
178	0050	0313 E	32366		2580	14604
178	0075	0143 B	32611		2612	14537
178	0100	0125	32762		2626	14535
178	0125	0166	32929		2636	14560

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1560 B	30758		2260	15041	0000	00000	5254
0010	1519	30763		2269	15030	0052	00003	5168
0020	1170	31072		2362	14918	0100	00010	4285
0030	0956	31818		2456	14852	0138	00019	3387
0050	0313 E	32366		2580	14604	0195	00041	2211
0075	0143 B	32611		2612	14537	0246	00074	1900
0100	0125	32762		2626	14535	0293	00115	1774
0125	0166	32929		2636	14560	0336	00165	1674

C-REF-NO 003 YR 1964 DEPTH 85 WAVES 1 XX AIR T 18.8 VIS
 CONS. NO 007 MONTH 9 MXSAMPD 01 WAVES 2 XX WET B 17.0 STN 001
 LAT 44-240N DAY 09 NO.DPTH 6 WND-DIR 360 WW-CODE
 LON 63-283W HR 19.0 W-COLOR WND-SPD 02 CLD-TPE
 MARSD SQ 151 C/I 1814 W-TRNSP BARO 1001.5 CLD-AMT HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	161 B	30840		2256	15058
190	0010	1559	30871		2269	15044
190	0020	1206	31227		2368	14933
190	0030	0787	31628		2467	14785
190	0050		31744			
190	0070	0260	31974		2553	14579

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1610 B	30840		2256	15058	0000	00000	5299
0010	1559	30871		2269	15044	0053	00003	5172
0020	1206	31227		2368	14933	0100	00010	4233
0030	0787	31628		2467	14785	0138	00019	3284
0050	0414 I	31744		2521	14639	0198	00043	2770

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CANADA

DATA RECORD

GULF OF ST. LAWRENCE

November 12 to November 29, 1963

No. 5

1965 Data Record Series

Canadian Oceanographic Data Centre

Programmed by the
Canadian Committee on Oceanography

1965

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GULF OF ST. LAWRENCE

November 12 to November 29, 1963

CODC Reference: 10-63-006

No. 5

1965 Data Record Series

Canadian Oceanographic Data Centre

615 Booth St., Ottawa, Canada

Programmed by the Canadian Committee on Oceanography

DEPARTMENT OF MINES AND TECHNICAL SURVEYS
and
FISHERIES RESEARCH BOARD OF CANADA

GULF OF ST. LAWRENCE

Ship: CNAV "SACKVILLE"

Local cruise designation: S-77

Cruise period: Phase 1: November 12 - November 22, 1963

Phase 2: November 22 - November 29, 1963

Observers:

Phase 1: W.D. Forrester

. M. E. MacLean

. C. C. Cunningham

. T. A. Holler

. A. B. Cooper

Phase 2: B. L. Blackford

. M. E. MacLean

. C. C. Cunningham

. T. A. Holler

MARINE SCIENCES BRANCH
and
ATLANTIC OCEANOGRAPHIC GROUP

Bedford Institute of Oceanography, Dartmouth, N.S.

SECTION I

Description of data collection procedures



"SACKVILLE"

Fisheries Research Board



SACKVILLE CRUISE CODE S-77
12/11/63 — 29/11/63

Stations
21-51

INTRODUCTION

The purpose of the first phase of this cruise was to occupy oceanographic stations in the Gulf of St. Lawrence for ice forecasting, and to observe oceanographic sections in Gaspé Passage for study of the Gaspé Current.

The purpose of the second phase was to check EMF cables and associated recorders installed across the Strait of Belle Isle, and to occupy oceanographic stations in the Strait of Belle Isle area.

EXTRACT OF CRUISE LOG

Phase 1:	Depart Halifax	-	November 12, 1963
	Occupy stations 1-53		
	Arrive Sydney	-	November 22, 1963.
Phase 2:	Depart Sydney	-	November 23, 1963
	Occupy stations 54-91		
	Return Halifax	-	November 29, 1963.

OBSERVATION PROCEDURES

Surface water samples were taken with a plastic bucket and below-surface samples were taken with Knudsen water bottles. Surface temperatures were read with a hand-held thermometer and below-surface temperatures were obtained from two reversing thermometers on each bottle. On casts deeper than 250 metres unprotected thermometers were used on the bottom bottles for depth determinations.

LABORATORY PROCEDURES

Salinities for the ice forecast stations were determined on board ship with an Auto-Lab salinometer, model 601, Mk III. All other salinities were determined at Bedford Institute of Oceanography with an NIO salinometer, model 4777.

BATHYTHERMOGRAPH DATA

BT observations to a maximum depth of 275 metres were made on station just prior to the first bottle cast. In the Gaspé Passage sections, BT's were also taken between stations.

Bathythermograph records were processed by the bathythermograph centre of the Bedford Institute of Oceanography.

PERSONNEL

At Sea:

W.D. Forrester	Scientist-in-Charge (Phase 1)
B. L. Blackford	Scientist-in-Charge (Phase 2)
D. Dobson	
M.E. MacLean	
C.C. Cunningham	
T.A. Holler	
A.B. Cooper	

Data Analyses:

Compilation of Data:	W.D. Forrester
	B. L. Blackford
	J. R. Chevrier
	M. E. MacLean
	T. A. Holler

Salinity determinations:	W. Young
	M. E. MacLean
	A. B. Cooper

BT Processing:	T. A. Grant
	D. M. MacDonald

SECTION II

Description of the machine-generated data record

15
INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "**estimate of precision**" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "**interpolation error estimate**" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "**measurement error estimate**" comprises the "**combined measurement and interpolation error estimate**". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

11. 10. 1941

OBSERVED CARD

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

σ_i = Standard deviation of the combined error estimates at standard oceanographic depth,

ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $\frac{1}{3} (V_{i_1} - V_{i_2})$

γ = Interpolation polynomial coefficient.

Z_j = Observed depth.

Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the **combined measurement and interpolation error estimate**. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the **interpolation error estimate** is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

(1) CRUISE REFERENCE NUMBER:

Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC

(2) CONSECUTIVE NUMBER:

Indicates the chronological order in which the stations were occupied.

(3) LATITUDE:

Indicate the position of the platform at the time of observation

(4) LONGITUDE:

(5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).

(6) YEAR:

(7) MONTH:

(8) DAY:

(9) HOUR:

The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.

(10) COUNTRY/
INSTITUTE:

The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.

(11) DEPTH:

The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".

(12) MAXIMUM

SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).

00 m - 50 m = 00

51 m - 150 m = 01

151 m - 250 m = 02

etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the **predominant non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE (WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED (WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_2
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01°C . Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 \text{ Cl}\%$, reported in:
 a. 1/100 parts per 1000, or
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

(8) PO ₄	Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
(9) -P-	Total Phosphorus reported to hundredths of microgram-atoms per litre.
(10) NO ₂	Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre — No dissolved nitrogen included —
(11) NO ₃	Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
(12) SiO ₂	Silicate-Silicon reported to tenths of microgram-atoms per litre.
(13) pH	The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

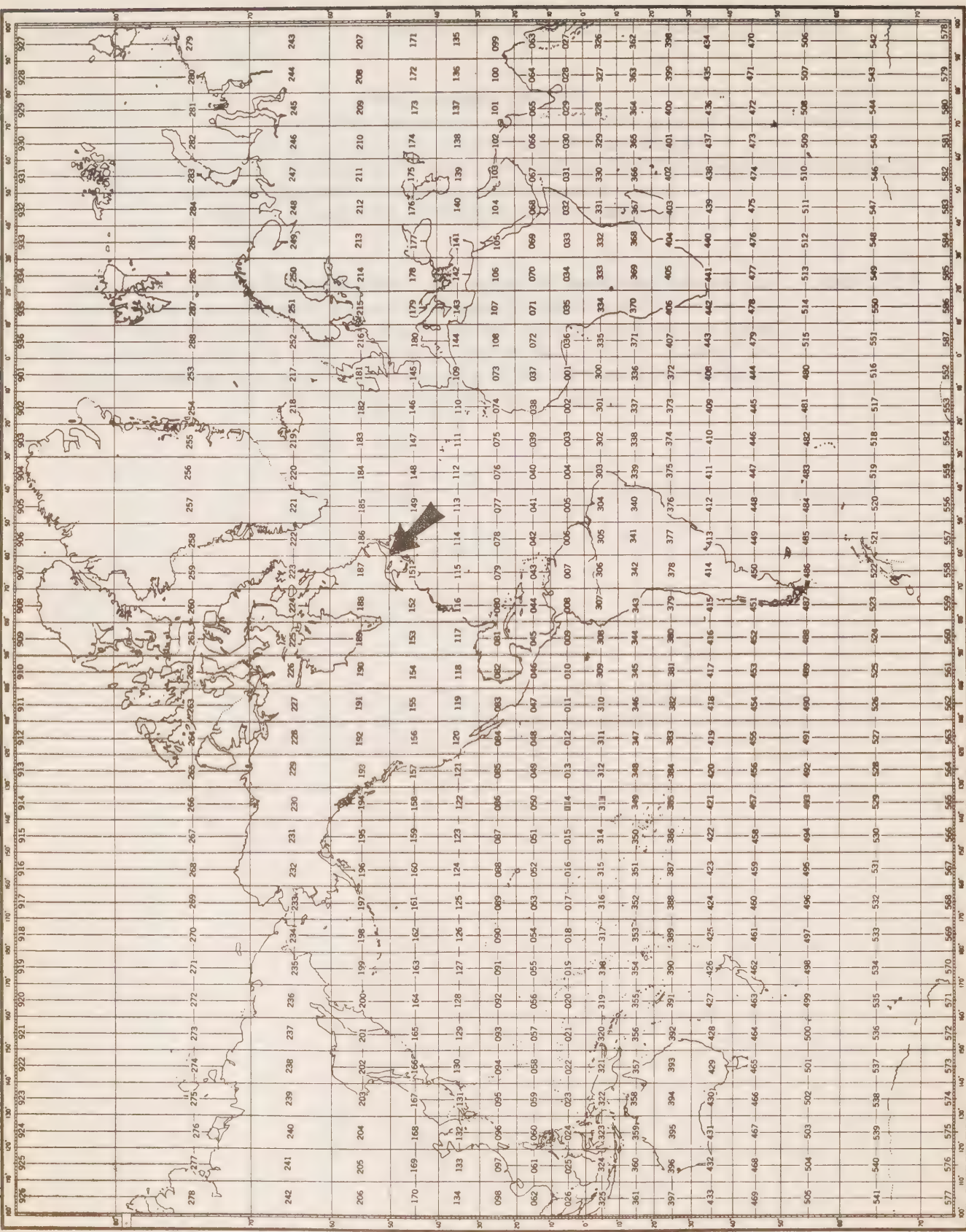
(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY: A. The reported salinity values are measured to three decimal places.
 (i) the interpolation error estimate is less than twice the standard deviation of measurement
 —the interpolated value is reported to three decimal places (e.g., 30.139).
 (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 —the interpolated value is reported to two decimal places, and followed by the **interpolation error estimate** (e.g., 29.23 C).
 B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 —the interpolated value is reported to two decimal places, and followed by the **combined measurement and interpolation error estimate** (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "Introduction" to section II of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^P \delta dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = 1/g \int_0^P p \delta dp = \int_0^z \rho p \delta dz$$
- χ is expressed in units of 10^6 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

- ‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs
- * (Asterisk): this character may occur in the interpolated portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one observed depth interval. The third, and all consequent levels within that interval are preceded by the asterisk to indicate that more than two machine interpolations were carried out, utilizing the same set of interpolation parabolas.



MARSDEN SQUARE CHART

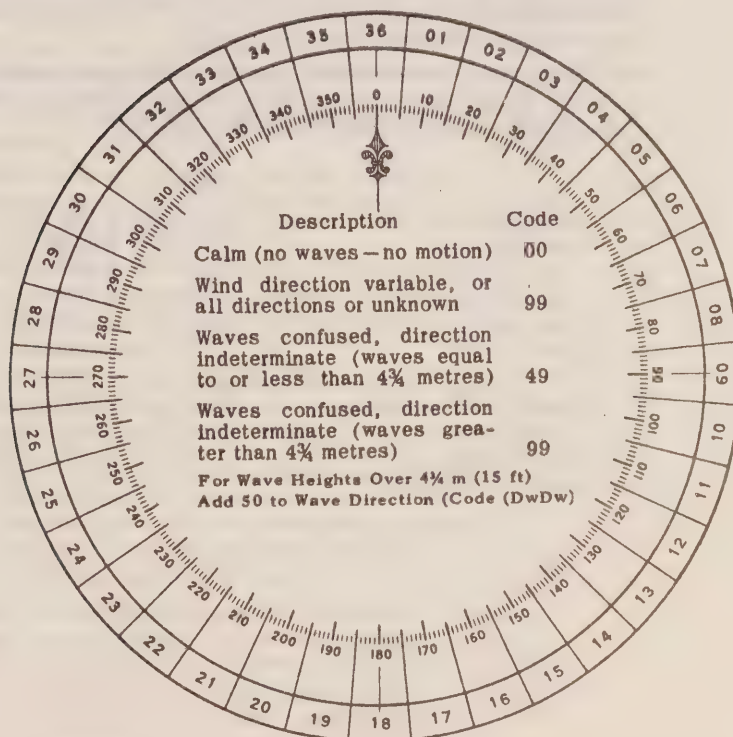
Table 1
CONVERSION
MINUTES TO $\frac{1}{10}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (P_w)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (H_w)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m (2½ ft); 5 = 2¼ m (7 ft) to 2¾ m (9 ft); 9 = 4¼ m (13½ ft) to 4¾ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of 2¾ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)		3 6½ m (21 ft)
4	2 m (6½ ft)		4 7 m (22½ ft)
5	2½ m (8 ft)		5 7½ m (24 ft)
6	3 m (9½ ft)		6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER
W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww			
No meteors except photometeors	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
Haze, dust, sand or smoke	03	Clouds generally forming or developing	
	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	More or less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	
ww = 20 - 29 Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation			
	20	Drizzle (not freezing) or snow grains	not falling as shower(s)
	21	Rain (not freezing)	
	22	Snow	
	23	Rain and snow or ice pellets, type (a)	
	24	Freezing drizzle or freezing rain	
	25	Shower(s) of rain	
	26	Shower(s) of snow, or of rain and snow	
	27	Shower(s) of hail, or of rain and hail	
	28	Fog or ice fog	
	29	Thunderstorm (with or without precipitation)	
ww = 30 - 39 Duststorm, sandstorm, drifting or blowing snow			
	30		- has decreased during the preceding hour
	31	Slight or moderate dust-storm or sand-storm	- no appreciable change during the preceding hour
	32		- has begun or has increased during the preceding hour
	33		- has decreased during the preceding hour
	34	Severe dust-storm or sand-storm	- no appreciable change during the preceding hour
	35		- has begun or has increased during the preceding hour
	36	Slight or moderate blowing snow	generally low (below eye level)
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	generally high (above eye level)
	39	Heavy blowing snow	
ww = 40 - 49 Fog or ice fog at the time of observation			
	40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	41	Fog or ice fog in patches	
	42	Fog or ice fog, sky visible	has become thinner during the preceding hour
	43	Fog or ice fog, sky invisible	
	44	Fog or ice fog, sky visible	no appreciable change during the preceding hour
	45	Fog or ice fog, sky invisible	
	46	Fog or ice fog, sky visible	has begun or has become thicker during the preceding hour
	47	Fog or ice fog, sky invisible	
	48	Fog, depositing rime, sky visible	
	49	Fog, depositing rime, sky invisible	

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

- | | | |
|----|--|--|
| 50 | Drizzle, not freezing, intermittent | } slight at time of observation |
| 51 | Drizzle, not freezing, continuous | |
| 52 | Drizzle, not freezing, intermittent | } moderate at time of observation |
| 53 | Drizzle, not freezing, continuous | |
| 54 | Drizzle, not freezing, intermittent | } heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous | |
| 56 | Drizzle, freezing, slight | |
| 57 | Drizzle, freezing, moderate or heavy (dense) | |
| 58 | Drizzle and rain, slight | |
| 59 | Drizzle and rain, moderate or heavy | |

ww = 60 - 69 Rain

- | | | |
|----|---|-----------------------------------|
| 60 | Rain, not freezing, intermittent | } slight at time of observation |
| 61 | Rain, not freezing, continuous | |
| 62 | Rain, not freezing, intermittent | } moderate at time of observation |
| 63 | Rain, not freezing, continuous | |
| 64 | Rain, not freezing, intermittent | } heavy at time of observation |
| 65 | Rain, not freezing, continuous | |
| 66 | Rain, freezing, slight | |
| 67 | Rain, freezing, moderate or heavy | |
| 68 | Rain or drizzle and snow, slight | |
| 69 | Rain or drizzle and snow, moderate or heavy | |

70 - 79 Solid precipitation not in showers

- | | | |
|----|---|-----------------------------------|
| ww | | |
| 70 | Intermittent fall of snow flakes | } slight at time of observation |
| 71 | Continuous fall of snow flakes | |
| 72 | Intermittent fall of snow flakes | } moderate at time of observation |
| 73 | Continuous fall of snow flakes | |
| 74 | Intermittent fall of snow flakes | } heavy at time of observation |
| 75 | Continuous fall of snow flakes | |
| 76 | Ice prisms (with or without fog) | |
| 77 | Snow grains (with or without fog) | |
| 78 | Isolated starlike snow crystals (with or without fog) | |
| 79 | Ice pellets, type (a) | |

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- | | | |
|----|--|---|
| 80 | Rain shower(s), slight | |
| 81 | Rain shower(s), moderate or heavy | |
| 82 | Rain shower(s), violent | |
| 83 | Shower(s) of rain and snow mixed, slight | |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy | |
| 85 | Snow shower(s), slight | |
| 86 | Snow shower(s), moderate or heavy | |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed | } - slight |
| 88 | | |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | } - moderate or heavy |
| 90 | | |
| 91 | Slight rain at time of observation | |
| 92 | Moderate or heavy rain at time of observation | |
| 93 | Slight snow, or rain and snow mixed or hail at time of observation | } thunderstorm during the preceding hour but not at time of observation |
| 94 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation | |
| 95 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | } thunderstorm at time of observation |
| 96 | Thunderstorm, slight or moderate, with hail at time of observation | |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation | |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation | |
| 99 | Thunderstorm, heavy, with hail at time of observation | |

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{3}{8}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11CCO Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N. B.
04. Arctic Biological Station, St. Anne de Bellevue, P. Q.
05. Biological Station, St. John's, Nfld.
06. Station de Biologie Marine, Grande Riviere, P. Q.
07. Canadian Hydrographic Service.
08. Naval Research Establishment, Dartmouth, N. S.
09. Pacific Naval Laboratory, Esquimalt, B. C.
10. Bedford Institute of Oceanography.
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Inland Region, Oceanographic Research, Ottawa.
14. Institute of Oceanography, Dalhousie University.

SECTION III

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Bedford Institute of Oceanography
<u>Observation platform:</u>	CNAV "Sackville"
<u>Vessel's cruising speed:</u>	12 knots
<u>Total number of stations occupied:</u>	91
<u>Anemometer height above sea level:</u>	11 metres
<u>Barometer readings</u>	Aneroid barometer (corrected)
<u>Air temperature</u>	Sling psychrometer
<u>Wet bulb temperature</u>	Sling psychrometer
<u>Surface sea water temperature</u>	Bucket sample - deck thermometer

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003

C-REF-NO 006	YR 1963	DEPTH 320	WAVES 1 XX	AIR T 08.5	VIS
CONS. NO 001	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 06.8	STN
LAT 47-050N	DAY 13	NO.DPTH 11	WND-DIR 250	WW-CODE 02	
LON 60-000W	HR 19.0	W-COLOR	WND-SPD 08	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	085 B	30067		2336	14784
190	0008	0850	30061		2336	14786
194	0015	0843	30073		2338	14784
194	0023	0842 B	30091		2339	14785
190	0033	0816	30250		2355	14779
190	0041	0735	30804		2410	14756
190	0061	0347	32304		2572	14620
194	0077	0190	32604		2608	14558
194	0115	0064	32991		2648	14513
194	0153	0178 B	33454		2677	14577
194	0191	0362	34017		2706	14671

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0850 B	30067		2336	14784	0000	00000	4530
0010	0848	30063		2336	14785	0045	00002	4531
0020	0843	30078		2338	14785	0091	00009	4514
0030	0830	3016 E		2346	14783	0136	00021	4434
0050	0564 I	3155 I		2489	14698	0211	00050	3072
0075	0204	3259 D		2606	14564	0275	00089	1957
0100	0079 B	3286 G		2636	14516	0320	00129	1670
0125	0079 C	33104		2656	14523	0360	00175	1485
0150	0163 B	33414		2675	14569	0395	00224	1305
0175	0254 E	33771		2697	14618	0425	00275	1106

C-REF-NO 006	YR 1963	DEPTH 449	WAVES 1 XX	AIR T 07.2	VIS
CONS. NO 002	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 06.3	STN
LAT 47-146N	DAY 13	NO.DPTH 11	WND-DIR 260	WW-CODE 01	
LON 59-450W	HR 21.1	W-COLOR	WND-SPD 09	CLD-TPE 3	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1008.5	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
216	0000	076 B	31595		2468	14769
216	0010	0760	31477		2459	14770
216	0019	0800	31815		2480	14791
216	0029	0804 B	31914		2487	14795
216	0039	0730	32112		2513	14771
216	0048	0295	32631		2602	14600
216	0072	0093	32827		2633	14517
216	0097	0065	33022		2650	14511
216	0145	0191	33512		2681	14582
216	0193	0464 B	34206		2711	14716
216	0241	0496	34478		2729	14741

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0760 B	31595		2468	14769	0000	00000	3269
0010	0760	31477		2459	14770	0033	00002	3358
0020	0803	3183 B		2481	14792	0066	00007	3155
0030	0808 C	3192 B		2487	14797	0097	00015	3094
0050	0248 H	3268 G		2610	14580	0148	00034	1921
0075	0083	32850		2635	14513	0193	00063	1682
0100	0067	33047		2652	14513	0234	00099	1522
0125	0115 B	33286		2668	14542	0270	00141	1370
0150	0222 C	3359 C		2685	14597	0303	00186	1216
0175	0367 H	3396 H		2701	14669	0331	00234	1068
0200	0416 I	3416 I		2713	14697	0357	00283	0966
0225	0469 I	3437 I		2723	14726	0380	00334	0874

C-REF-NO 006	YR 1963	DEPTH 460	WAVES 1 XX	AIR T 07.7	VIS
CONS. NO 003	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 07.0	STN
LAT 47-250N	DAY 13	NO.DPTH 11	WND-DIR 210	WW-CODE 02	
LON 59-350W	HR 23.1	W-COLOR	WND-SPD 05	CLD-TPE	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1009.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
236	0000	075 B	31158		2435	14760
236	0010	0776	31494		2458	14776
236	0020	0834	32135		2500	14808
236	0030	0836	32146		2501	14811
236	0040	0835	32150		2501	14812
236	0050	0820	32181		2506	14808
236	0075	0147	32742		2622	14541
236	0099	0063	32888		2639	14509
236	0149	0024	33164		2664	14503
236	0199	0397 B	34007		2702	14687
236	0249	0496	34483		2729	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0750 B	31158		2435	14760	0000	00000	3582
0010	0776	31494		2458	14776	0035	00002	3367
0020	0834	32135		2500	14808	0067	00007	2970
0030	0836	32146		2501	14811	0097	00014	2966
0050	0820	32181		2506	14808	0156	00038	2921
0075	0147	32742		2622	14540	0215	00075	1803
0100	0059	32891		2640	14507	0259	00113	1637
0125	0006 E	3300 H		2651	14488	0298	00159	1527
0150	0031	33180		2664	14506	0335	00211	1401
0175	0209 I	3359 I		2686	14596	0368	00265	1207
0200	0286 I	3386 I		2701	14638	0397	00320	1066
0225	0385 I	3417 I		2716	14688	0422	00375	0933
*0250	0501 8	34497		2730	14745	0444	00429	0814

C-REF-NO 006	YR 1963	DEPTH 173	WAVES 1 XX	AIR T 07.2	VIS
CONS. NO 004	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 06.1	STN
LAT 47-59N	DAY 14	NO.DPTH 10	WND-DIR 090	WW-CODE 03	
LON 59-305W	HR 03.0	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
033	0000	083 B	31923		2484	14801
033	0010	0822	31907		2484	14799
033	0020	0820	31907		2484	14800
033	0030	0814 B	31909		2485	14799
033	0040	0827	31999		2490	14807
033	0050	0835	32034		2492	14812
033	0075	0812	32132		2503	14809
033	0100	0503	32373		2561	14693
033	0150	0047	32706		2626	14507
033	0152	0082 B	32773		2629	14524

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0830 B	31923		2484	14801	0000	00000	3119
0010	0822	31907		2484	14799	0031	00002	3122
0020	0820	31907		2484	14800	0063	00006	3120
0030	0814 B	31909		2485	14799	0094	00014	3112
0050	0835	32034		2492	14812	0156	00040	3051
0075	0812	32132		2503	14809	0232	00088	2950
0100	0503	32373		2561	14693	0299	00147	2390
0150	0047	32706		2626	14507	0403	00278	1770

C-REF-NO 006	YR 1963	DEPTH 448	WAVES 1 XX	AIR T 05.2	VIS
CONS. NO 005	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 05.1	STN
LAT 48-150N	DAY 14	NO.DPTH 11	WND-DIR 180	WW-CODE 51	
LON 60-000W	HR 06.1	W-COLOR	WND-SPD 03	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1015.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
066	0000	083 B	31947		2486	14801
066	0010	0831	31939		2485	14803
066	0020	0831 B	31942		2485	14805
066	0029	0830 B	31954		2486	14806
066	0039	0832	31984		2488	14809
066	0049	0616	32242		2538	14729
066	0074	0216	32603		2606	14569
066	0098	0124	32743		2624	14534
066	0148	0054	33181		2663	14517
066	0197	0210	33569		2684	14600
066	0247	0450	34350		2724	14721

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0830 B	31947		2486	14801	0000	00000	3101
0010	0831	31939		2485	14803	0031	00002	3110
0020	0831 B	31942		2485	14805	0062	00006	3110
0030	0835 B	31951		2485	14808	0094	00014	3110
0050	0595	32262		2542	14721	0151	00037	2571
0075	0209	32610		2608	14566	0208	00073	1945
0100	0117	32759		2626	14532	0255	00114	1771
0125	0062 B	3297 C		2646	14513	0297	00163	1578
0150	0057	33194		2664	14519	0334	00215	1405
0175	0121 C	3337 F		2675	14554	0368	00272	1307
0200	0197 H	3368 I		2694	14596	0399	00331	1111
0225	0314 E	3402 I		2711	14656	0426	00389	0978
*0250	0471	3440 B		2725	14731	0449	00445	0854

C-REF-NO 006	YR 1963	DEPTH 384	WAVES 1 XX	AIR T 05.1	VIS
CONS. NO 006	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 04.9	STN
LAT 48-300N	DAY 14	NO.DPTH 11	WND-DIR 080	WW-CODE 63	
LON 60-300W	HR 09.2	W-COLOR	WND-SPD 04	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
101	0000	068 B	31326		2458	14734
101	0010	0673	31315		2458	14733
101	0020	0651 B	31320		2461	14726
101	0030	0623 B	31358		2467	14717
101	0040	0407	31654		2515	14633
101	0050	0077	32274		2589	14498
101	0075	-0031 B	32561		2618	14457
101	0100	-0046	32828		2640	14458
101	0150	0216	33550		2682	14594
101	0200	0420	34200		2715	14699
101	0250	0497	34572		2736	14744

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0680 B	31326		2458	14734	0000	00000	3368
0010	0673	31315		2458	14733	0034	00002	3369
0020	0651 B	31320		2461	14726	0068	00007	3340
0030	0623 B	31358		2467	14717	0101	00015	3279
0050	0077	32274		2589	14498	0155	00036	2117
0075	-0031 B	32561		2618	14457	0205	00068	1846
0100	-0046	32828		2640	14458	0249	00107	1635
0125	0064 I	3318 E		2663	14518	0287	00151	1421
0150	0216	33550		2682	14594	0321	00198	1242
0175	0330 B	3390 C		2700	14653	0350	00247	1078
0200	0420	34200		2715	14699	0376	00295	0942
0225	0464 B	3439 E		2725	14724	0398	00345	0849
0250	0497	34572		2736	14744	0418	00394	0753

C-REF-NO 006	YR 1963	DEPTH 365	WAVES 1 XX	AIR T 06.0	VIS
CONS. NO 007	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 05.2	STN
LAT 48-400N	DAY 14	NO.DPTH 11	WND-DIR 100	WW-CODE	
LON 60-595W	HR 12.4	W-COLOR	WND-SPD 03	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
128	0000	057 B	31326		2471	14690
128	0010	0562	31315		2471	14688
128	0020	0561 B	31319		2472	14690
128	0030	0492	31419		2487	14664
128	0039	0151	32162		2576	14528
128	0049	0098	32349		2594	14509
128	0074	-0048	32609		2622	14450
128	0098	-0043	32879		2644	14460
128	0148	0200	33525		2681	14587
128	0197	0365	34054		2709	14673
128	0246	0476	34522		2735	14734

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0570 B	31326		2471	14690	0000	00000	3240
0010	0562	31315		2471	14688	0033	00002	3241
0020	0561 B	31319		2472	14689	0065	00007	3237
0030	0492	31419		2487	14664	0097	00015	3090
0050	0091	32362		2596	14506	0149	00035	2058
0075	-0050	32620		2623	14449	0197	00066	1793
0100	-0036 B	32905		2645	14464	0240	00103	1580
0125	0073 H	3323 C		2666	14522	0277	00146	1389
0150	0208	33548		2683	14591	0310	00193	1237
0175	0299	33827		2697	14638	0340	00242	1103
0200	0377	3409 B		2711	14679	0366	00292	0979
0225	0437	34335		2724	14712	0389	00342	0862
*0250	0482	34556		2737	14738	0409	00392	0748

C-REF-NO 006 YR 1963 DEPTH 131 WAVES 1 XX AIR T 04.8 VIS
 CONS. NO 008 MONTH 11 MXSAMPD 01 WAVES 2 XX WET B 04.4 STN
 LAT 48-550N DAY 14 NO.DPTH 8 WND-DIR 030 WW-CODE 02
 LON 61-310W HR 15.2 W-COLOR WND-SPD 08 CLD-TPE 6
 MARSD SQ 151 C/I 1810 W-TRNSP BARO 1006.0 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
156	0000	054 B	31352		2477	14678
156	0010	0534	31329		2476	14677
156	0020	0507	31367		2482	14668
156	0030	0458	31454		2494	14650
156	0040	0280	31822		2539	14581
156	0049	0095	32181		2581	14505
156	0074	-0002	32436		2606	14469
156	0098	-0026	32568		2618	14463

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0540 B	31352		2477	14678	0000	00000	3188
0010	0534	31329		2476	14677	0032	00002	3200
0020	0507	31367		2482	14668	0064	00007	3144
0030	0458	31454		2494	14650	0095	00014	3029
0050	0085 B	3220 B		2583	14501	0147	00035	2175
0075	-0081 I	3258 I		2621	14434	0198	00067	1812
0100	-0010 D	3255 E		2616	14471	0244	00108	1864

C-REF-NO 006	YR 1963	DEPTH 223	WAVES 1 XX	AIR T 04.0	VIS
CONS. NO 009	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 03.5	STN
LAT 49-300N	DAY 14	NO.DPTH 10	WND-DIR 070	WW-CODE 02	
LON 61-300W	HR 19.1	W-COLOR	WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1002.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	050 B	31216		2470	14660
196	0009	0500	31306		2477	14662
196	0019	0502	31318		2478	14665
196	0028	0500	31318		2478	14666
196	0038	0481	31326		2481	14659
196	0047	0123	32066		2570	14516
196	0071	0026	32461		2607	14481
196	0094	-0002	32691		2627	14475
196	0141	0090	33181		2661	14532
196	0188	0266	33756		2694	14625

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0500 B	31216		2470	14660	0000	00000	3240
0010	0500	31310		2478	14663	0032	00002	3179
0020	0502	31318		2478	14665	0064	00007	3176
0030	0513 E	3129 H		2474	14671	0096	00015	3212
0050	0075 I	3218 I		2582	14496	0151	00036	2186
0075	0017	3251 B		2611	14478	0202	00069	1909
0100	0002	32750		2631	14479	0248	00109	1715
0125	0043 B	33008		2650	14505	0289	00156	1538
0150	0100 E	3329 B		2670	14539	0325	00207	1354
0175	0199 C	33593		2687	14592	0357	00261	1197

C-REF-NO 006	YR 1963	DEPTH 133	WAVES 1 XX	AIR T 02.5	VIS
CONS. NO 010	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B 00.5	STN
LAT 50-050N	DAY 15	NO.DPTH 8	WND-DIR 360	WW-CODE 01	
LON 64-150W	HR 05.2	W-COLOR	WND-SPD 10	CLD-TPE	
MARSD SQ 187	C/I 1810	W-TRNSP	BARO 999.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
056	0000	049 B	30987		2453	14653
056	0010	0496	31006		2454	14657
056	0019	0492	31088		2461	14658
056	0029	0475	31119		2465	14653
056	0039	0466	31184		2471	14651
056	0048	0460	31198		2473	14651
056	0072	0421	31377		2491	14641
056	0097	0274	31859		2543	14588

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0490 B	30987		2453	14653	0000	00000	3411
0010	0496	31006		2454	14657	0034	00002	3403
0020	0490	31092		2462	14657	0068	00007	3334
0030	0474	31126		2466	14653	0101	00015	3292
0050	0459	31204		2474	14651	0167	00042	3220
0075	0399 C	3143 C		2498	14632	0245	00092	2994

C-REF-NO 006 YR 1963 DEPTH 168 WAVES 1 XX AIR T 01.5 VIS
 CONS. NO 011 MONTH 11 MXSAMPD 01 WAVES 2 XX WET B 00.0 STN
 LAT 50-000N DAY 15 NO.DPTH 8 WND-DIR 360 WW-CODE 02
 LON 66-200W HR 12.7 W-COLOR WND-SPD 05 CLD-TPE 6
 MARSD SQ 187 C/I 1810 W-TRNSP BARO 1001.0 CLD-AMT 2 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
130	0000	043 B	30772		2442	14624
130	0010	0439	30762		2441	14630
130	0020	0446	30775		2441	14635
130	0030	0518	31072		2457	14670
130	0039	0451	31315		2483	14647
130	0049	0428	31423		2494	14640
130	0074	0365	31599		2514	14620
130	0098	0177	32206		2578	14550

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0430 B	30772		2442	14624	0000	00000	3510
0010	0439	30762		2441	14630	0035	00002	3531
0020	0446	30775		2441	14635	0071	00007	3529
0030	0518	31072		2457	14670	0106	00016	3378
0050	0427	3143 B		2495	14640	0170	00042	3021
0075	0341 F	3170 I		2524	14611	0242	00088	2737
0100	0159	3226 C		2583	14543	0304	00143	2177

C-REF-NO 006	YR 1963	DEPTH 320	WAVES 1 XX	AIR T 00.3	VIS
CONS. NO 012	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 00.1	STN
LAT 49-445N	DAY 15	NO.DPTH 5	WND-DIR 360	WW-CODE 02	
LON 66-195W	HR 14.4	W-COLOR	WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1001.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
148	0000	034 B	30550		2433	14583
148	0010	0332	30525		2432	14581
148	0019	0334	30527		2432	14583
148	0029	0230	31893		2549	14558
148	0038	0077	32160		2580	14495

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340 B	30550		2433	14583	0000	00000	3604
0010	0332	30525		2432	14581	0036	00002	3617
0020	0328	3066 I		2443	14582	0072	00007	3514
0030	0222 B	3157 I		2523	14550	0104	00015	2744

C-REF-NO 006	YR 1963	DEPTH 329	WAVES 1 XX	AIR T 03.0	VIS
CONS. NO 013	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 00.5	STN
LAT 49-300N	DAY 15	NO.DPTH 11	WND-DIR 320	WW-CODE 02	
LON 66-200W	HR 16.2	W-COLOR	WND-SPD 09	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1001.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
167	0000	037 B	30535		2429	14596
167	0009	0370 B	30543		2430	14597
167	0019	0375	30574		2432	14602
167	0028	0120 B	32064		2570	14511
167	0037	0068	32322		2594	14493
167	0047	0041	32447		2605	14484
167	0070	0027	32739		2629	14485
167	0093	0042	32986		2648	14499
167	0140	0142	33332		2670	14557
167	0186	0260	33716		2692	14622
167	0233	0390	34195		2718	14692

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0370 B	30535		2429	14596	0000	00000	3641
0010	0377 C	3051 H		2426	14600	0037	00002	3668
0020	0348 D	3074 I		2447	14592	0073	00007	3471
0030	0099 C	3218 I		2581	14504	0101	00014	2201
0050	0036	32486		2608	14483	0143	00031	1934
0075	0028	32797		2634	14488	0188	00060	1693
0100	0053	3304 B		2652	14507	0229	00096	1518
0125	0104 B	3323 C		2664	14536	0266	00138	1405
0150	0166	33410		2675	14571	0300	00186	1311
0175	0230	33618		2686	14606	0332	00239	1202
0200	0296	33856		2700	14642	0360	00294	1080
0225	0366	34110		2713	14679	0386	00350	0957

C-REF-NO 006	YR 1963	DEPTH 237	WAVES 1 XX	AIR T 02.5	VIS
CONS. NO 014	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 00.8	STN
LAT 49-150N	DAY 15	NO.DPTH 10	WND-DIR 320	WW-CODE 03	
LON 66-190W	HR 18.3	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1001.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
187	0000	036 B	30625		2437	14593
187	0008	0358	30619		2437	14593
187	0016	0364	30625		2437	14597
187	0024	0418	30881		2452	14625
187	0032	0399	30905		2456	14618
187	0039	0389	30946		2460	14616
187	0059	0364	31171		2480	14611
187	0079	0091	32121		2576	14507
187	0118	0042	32546		2613	14498
187	0158	0105	33123		2656	14541

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0360 B	30625		2437	14593	0000	00000	3564
0010	0357	3061 C		2436	14593	0036	00002	3575
0020	0393 C	3075 G		2444	14612	0071	00007	3497
0030	0407 B	3091 C		2455	14621	0106	00016	3392
0050	0390 E	3102 H		2465	14619	0173	00044	3298
0075	0149 F	3192 I	,	2557	14530	0245	00088	2427
0100	0018 I	3246 I		2607	14482	0300	00137	1945
0125	-0038 I	3295 I		2649	14467	0344	00187	1541
0150	0049 H	3313 I		2659	14514	0382	00240	1452

C-REF-NO 006	YR 1963	DEPTH 56	WAVES 1 XX	AIR T 01.3	VIS
CONS. NO 015	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 00.0	STN
LAT 48-575N	DAY 16	NO.DPTH 6	WND-DIR 300	WW-CODE 02	
LON 64-166W	HR 14.4	W-COLOR	WND-SPD 15	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 999.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
147	0000	032 B	30635		2441	14576
147	0007	0315	30574		2437	14574
147	0016	0314	30566		2436	14575
147	0025	0316	30567		2436	14577
147	0034	0315	30568		2437	14578
147	0044	0320	30583		2437	14582

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0320 B	30635		2441	14576	0000	00000	3524
0010	0314	30566		2437	14574	0036	00002	3572
0020	0315	30566		2436	14576	0072	00007	3573
0030	0315	30567		2436	14578	0107	00017	3573

C-REF-NO 006	YR 1963	DEPTH 64	WAVES 1 XX	AIR T 02.2	VIS
CONS. NO 016	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 01.3	STN
LAT 48-578N	DAY 17	NO.DPTH 5	WND-DIR 320	WW-CODE 02	
LUN 64-165W	HR 16.2	W-COLOR	WND-SPD 12	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
163	0000	028 B	30374		2424	14555
163	0010	0271	30345		2422	14552
163	0020	0271	30348		2423	14554
163	0030	0273 B	30347		2422	14556
163	0039	0271	30348		2423	14557

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0280 B	30374		2424	14555	0000	00000	3691
0010	0271	30345		2422	14552	0037	00002	3707
0020	0271	30348		2423	14554	0074	00008	3705
0030	0273 B	30347		2422	14556	0112	00017	3707

C-REF-NO 006	YR 1963	DEPTH 256	WAVES 1 XX	AIR T 02.3	VIS
CONS. NO 017	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 01.4	STN
LAT 48-588N	DAY 17	NO.DPTH 11	WND-DIR 290	WW-CODE	
LON 64-115W	HR 17.2	W-COLOR	WND-SPD 09	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
178	0000	033 B	30526		2432	14578
178	0010	0326	30521		2432	14578
178	0019	0326	30532		2433	14580
178	0029	0330	30619		2439	14584
178	0039	0316	30711		2448	14581
178	0048	0308	30788		2455	14580
174	0060	0292	30959		2470	14578
174	0084	0259	31327		2501	14572
174	0115	0096	32279		2589	14518
174	0145	0031	32657		2622	14498
174	0175	0129	33276		2666	14556

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0330 B	30526		2432	14578	0000	00000	3615
0010	0326	30521		2432	14578	0036	00002	3615
0020	0327	30539		2433	14580	0073	00007	3603
0030	0329	30628		2440	14584	0108	00017	3537
0050	0306	30813		2457	14580	0178	00045	3378
0075	0276 B	3117 D		2487	14576	0259	00097	3088
0100	0177 E	3182 I		2547	14545	0330	00159	2522
0125	0060 B	3242 I		2602	14505	0387	00224	1994
0150	0049 D	3288 I		2639	14510	0432	00287	1639
0175	0129	33276		2666	14556	0471	00351	1387

C-REF-NO 006	YR 1963	DEPTH 310	WAVES 1 XX	AIR T 02.2	VIS
CONS. NO 018	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 01.2	STN
LAT 49-015N	DAY 17	NO.DPTH 12	WND-DIR 290	WW-CODE 02	
LON 64-076W	HR 18.9	W-COLOR	WND-SPD 07	CLD-TPE 1	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	035 B	30520		2430	14587
196	0007	0323	30518		2432	14576
196	0014	0323	30538		2434	14578
196	0021	0313	30914		2464	14580
196	0028	0345	31104		2477	14597
196	0035	0352	31449		2503	14606
196	0053	0114	32151		2577	14514
191	0099	0075	32421		2601	14508
191	0135	0046	32763		2630	14505
191	0170	0122	33216		2662	14551
191	0205	0272 B	33747		2693	14631
191	0244	0378	34172		2717	14688

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0350 B	30520		2430	14587	0000	00000	3635
0010	0322	3050 E		2431	14576	0036	00002	3625
0020	0313	3086 D		2460	14579	0072	00007	3353
0030	0351	3120 B		2483	14601	0104	00015	3125
0050	0162 F	32055		2566	14534	0159	00037	2334
0075	0044 I	3241 I		2602	14489	0214	00072	1999
0100	0073	32429		2602	14507	0264	00117	1996
0125	0049 B	32656		2621	14503	0312	00172	1809
0150	0068	32945		2644	14520	0355	00232	1600
0175	0143 B	3329 B		2667	14563	0392	00294	1382
0200	0250 B	3367 B		2689	14619	0425	00356	1178
0225	0314 E	3395 F		2706	14655	0452	00416	1026

C-REF-NO 006	YR 1963	DEPTH 329	WAVES 1 XX	AIR T 02.0	VIS
CONS. NO 019	MONTH 11	MXSAMPD 03	WAVES 2 XX	WET B 00.6	STN
LAT 49-050N	DAY 17	NO.DPTH 13	WND-DIR 290	WW-CODE 02	
LON 64-052W	HR 20.4	W-COLOR	WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
210	0000	052 B	31167		2464	14667
210	0010	0510	31152		2464	14665
210	0020	0514 B	31154		2464	14668
210	0030	0520	31186		2466	14673
210	0040	0532	31237		2469	14680
210	0050	0331	31654		2522	14602
210	0075	0061	32338		2595	14496
206	0103	0020	32616		2620	14486
206	0153	0117	33220		2663	14547
206	0202	0277	33776		2695	14633
206	0251	0390	34210		2719	14695
206	0300	0468	34592		2741	14741
206	0320	0473	34674		2747	14747

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0520 B	31167		2464	14667	0000	00000	3306
0010	0510	31152		2464	14665	0033	00002	3308
0020	0514 B	31154		2464	14668	0067	00007	3311
0030	0520	31186		2466	14672	0100	00015	3294
0050	0331	31654		2522	14602	0161	00040	2764
0075	0061	32338		2595	14496	0221	00077	2059
0100	0016 B	3260 C		2618	14483	0270	00121	1838
0125	0045 C	3288 C		2639	14505	0314	00171	1640
0150	0107	33182		2660	14541	0353	00226	1443
0175	0188 B	33479		2679	14585	0387	00283	1274
0200	0270	33755		2694	14629	0418	00341	1134
0225	0335	33991		2707	14664	0445	00400	1017
0250	0388	34202		2719	14694	0469	00459	0912
0300	0468	34592		2741	14741	0510	00573	0711

C-REF-NO 006	YR 1963	DEPTH 351	WAVES 1 XX	AIR T 02.5	VIS
CONS. NO 020	MONTH 11	MXSAMPD 03	WAVES 2 XX	WET B 01.3	STN
LAT 49-067N	DAY 17	NO.DPTH 13	WND-DIR 320	WW-CODE 02	
LON 64-010W	HR 21.8	W-COLOR	WND-SPD 05	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
224	0000	055 B	31249		2467	14681
224	0010	0549	31245		2467	14682
224	0020	0553	31265		2468	14686
224	0030	0552	31270		2469	14687
224	0040	0552	31279		2470	14689
224	0050	0446 B	31440		2494	14648
224	0075	0008	32396		2603	14473
221	0100	0027	32631		2621	14489
221	0149	0109	33202		2662	14542
221	0199	0300 B	33859		2700	14643
221	0248	0408	34269		2722	14703
221	0297	0469	34609		2742	14741
221	0337	0475	34724		2751	14752

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0550 B	31249		2467	14681	0000	00000	3276
0010	0549	31245		2467	14682	0033	00002	3279
0020	0553	31265		2468	14686	0066	00007	3269
0030	0552	31270		2469	14687	0099	00015	3265
0050	0446 B	31440		2494	14648	0162	00041	3030
0075	0008	32396		2603	14473	0225	00080	1989
0100	0027	32631		2621	14489	0273	00122	1818
0125	0059	32909		2641	14511	0316	00172	1623
0150	0113	33216		2663	14544	0355	00226	1421
0175	0207 D	3355 D		2683	14595	0388	00281	1232
0200	0303 B	33869		2700	14645	0417	00337	1076
0225	0365	3410 B		2712	14679	0443	00393	0967
0250	0412	34286		2723	14705	0466	00449	0874
0300	0469	3460 E		2742	14741	0506	00561	0706

C-REF-NO 006	YR 1963	DEPTH 365	WAVES 1 XX	AIR T 03.0	VIS
CONS. NO 021	MONTH 11	MXSAMPD 03	WAVES 2 XX	WET B 01.5	STN
LAT 49-096N	DAY 17	NO.DPTH 13	WND-DIR 220	WW-CODE 02	
LON 63-573W	HR 23.2	W-COLOR	WND-SPD 05	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
238	0000	055 B	31337		2474	14682
238	0010	0556	31333		2473	14686
238	0020	0559	31341		2474	14689
238	0030	0560	31348		2474	14691
238	0040	0560	31351		2474	14693
238	0050	0562	31354		2474	14695
238	0075	0020	32364		2599	14478
235	0100	0029	32702		2626	14491
235	0150	0118	33241		2664	14547
235	0200	0326	33884		2699	14655
235	0250	0418	34321		2725	14708
235	0300	0469	34607		2742	14741
235	0350	0474	34712		2750	14753

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0550 B	31337		2474	14682	0000	00000	3210
0010	0556	31333		2473	14686	0032	00002	3221
0020	0559	31341		2474	14689	0065	00007	3219
0030	0560	31348		2474	14691	0097	00015	3215
0050	0562	31354		2474	14695	0162	00041	3215
0075	0020	32364		2599	14478	0228	00082	2019
0100	0029	32702		2626	14491	0275	00124	1765
0125	0060	3298 D		2647	14513	0317	00172	1572
0150	0118	33241		2664	14547	0355	00225	1406
0175	0222 E	3357 D		2683	14601	0388	00280	1233
0200	0326	33884		2699	14655	0417	00336	1086
0225	0382 B	34125		2713	14686	0443	00392	0961
0250	0418	34321		2725	14708	0466	00448	0854
0300	0469	34607		2742	14741	0505	00558	0701

C-REF-NO 006	YR 1963	DEPTH 365	WAVES 1 XX	AIR T 03.4	VIS-
CONS. NO 022	MONTH 11	MXSAMPD 03	WAVES 2 XX	WET B 02.1	STN
LAT 49-123N	DAY 18	NO.DPTH 13	WND-DIR 170	WW-CODE	
LON 63-535W	HR 00.5	W-COLOR	WND-SPD 07	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1018.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
008	0000	048 B	30809		2440	14646
008	0010	0461	30732		2436	14639
008	0020	0469	31030		2459	14648
008	0030	0474	31058		2461	14652
008	0040	0536	31288		2472	14682
008	0050	0572	31371		2475	14700
008	0075	0056	32274		2590	14493
008	0100	0006	32594		2619	14479
008	0150	0097	33209		2663	14537
008	0200	0316	33843		2697	14650
008	0250	0422	34259		2720	14709
008	0300	0464	34527		2736	14738
008	0350	0475	34707		2749	14754

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0480 B	30809		2440	14646	0000	00000	3535
0010	0461	30732		2436	14639	0036	00002	3575
0020	0469	31030		2459	14648	0071	00007	3359
0030	0474	31058		2461	14652	0104	00016	3343
0050	0572	31371		2475	14700	0170	00043	3213
0075	0056	32274		2590	14493	0237	00084	2105
0100	0006	32594		2619	14479	0287	00128	1836
0125	0028 C	32902		2642	14497	0330	00177	1611
0150	0097	33209		2663	14537	0368	00231	1417
0175	0206 E	3354 C		2682	14594	0402	00287	1243
0200	0316	33843		2697	14650	0431	00343	1108
0225	0380	34074		2709	14685	0458	00401	0998
0250	0422	34259		2720	14709	0482	00459	0905
0300	0464	34527		2736	14738	0524	00577	0755

C-REF-NO 006	YR 1963	DEPTH 349	WAVES 1 XX	AIR T 03.8	VIS
CONS. NO 023	MONTH 11	MXSAMPD 03	WAVES 2 XX	WET B 02.5	STN
LAT 49-146N	DAY 18	NO.DPTH 13	WND-DIR 170	WW-CODE	
LON 63-493W	HR 01.7	W-COLOR	WND-SPD 08	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1016.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
020	0000	038 B	30328		2412	14597
020	0010	0391	30293		2408	14603
020	0020	0436	30566		2426	14628
020	0030	0582	31214		2461	14698
020	0040	0574	31271		2466	14697
020	0050	0549	31349		2475	14690
020	0075	0028	32285		2593	14480
020	0100	0064	32617		2617	14506
020	0150	0077	33074		2653	14526
020	0200	0306	33815		2696	14645
020	0250	0424	34248		2719	14710
020	0300		34495			
020	0330	0476	34666		2746	14750

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0380 B	30328		2412	14597	0000	00000	3806
0010	0391	30293		2408	14603	0038	00002	3842
0020	0436	30566		2426	14628	0076	00008	3677
0030	0582	31214		2461	14698	0111	00017	3340
0050	0549	31349		2475	14690	0177	00044	3204
0075	0028	32285		2593	14480	0244	00084	2083
0100	0064	32617		2617	14506	0293	00128	1848
0125	0062 F	3285 H		2636	14512	0338	00179	1673
0150	0077	33074		2653	14526	0378	00235	1507
0175	0185 G	3345 H		2676	14583	0413	00294	1297
0200	0306	33815		2696	14645	0443	00352	1120
0225	0376	3406 B		2709	14683	0470	00410	1002
0250	0424	34248		2719	14710	0494	00469	0915
0300	0486 B	34495		2731	14747	0538	00591	0804

C-REF-NO 006	YR 1963	DEPTH 294	WAVES 1 XX	AIR T 03.9	VIS
CONS. NO 024	MONTH 11	MXSAMPD 03	WAVES 2 XX	WET B 02.7	STN
LAT 49-173N	DAY 18	NO.DPTH 12	WND-DIR 170	WW-CODE	
LON 63-451W	HR 02.8	W-COLOR	WND-SPD 10	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1015.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
031	0000	041 B	30302		2407	14610
031	0010	0394	30377		2415	14606
031	0020	0442	30964		2456	14635
031	0030	0397	31054		2468	14619
031	0039	0348	31705		2524	14608
031	0049	0278	31852		2542	14582
031	0074	0071	32463		2605	14502
031	0098	-0003	32659		2624	14475
031	0148	0052	33058		2654	14514
031	0197	0198	33483		2678	14593
031	0246	0386	34103		2711	14691
031	0271	0431	34313		2723	14717

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0410 B	30302		2407	14610	0000	00000	3852
0010	0394	30377		2415	14606	0038	00002	3781
0020	0442	30964		2456	14635	0074	00007	3383
0030	0397	31054		2468	14619	0108	00016	3273
0050	0269	3188 B		2544	14578	0166	00039	2545
0075	0066	32475		2606	14500	0223	00074	1958
0100	-0004	32675		2626	14475	0270	00116	1770
0125	0003 D	32873		2641	14485	0313	00165	1621
0150	0057	33073		2655	14517	0352	00220	1496
0175	0124	3328 B		2667	14554	0388	00281	1382
0200	0211	3352 B		2680	14600	0421	00345	1260
0225	0311 D	3384 F		2697	14652	0451	00409	1105
0250	0379 E	3410 I		2711	14689	0478	00473	0982

C-REF-NO 006	YR 1963	DEPTH 270	WAVES 1 XX	AIR T	VIS
CONS. NO 025	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B	STN
LAT 49-194N	DAY 18	NO.DPTH 11	WND-DIR 180	WW-CODE	
LON 63-417W	HR 03.9	W-COLOR	WND-SPD 10	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1014.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
042	0000	045 B	31268		2480	14640
042	0010	0446	31276		2481	14640
042	0019	0266	31814		2540	14571
042	0028	0203 B	32030		2562	14548
042	0038	0184	32104		2569	14542
042	0047	0119	32263		2586	14517
042	0071	0046	32432		2604	14490
042	0095	0010	32701		2627	14481
042	0143	0014	32914		2644	14494
042	0190	0061	33083		2655	14525
042	0237	0350	33992		2706	14673

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0450 B	31268		2480	14640	0000	00000	3160
0010	0446	31276		2481	14640	0032	00002	3151
0020	0255	31849		2543	14567	0060	00006	2554
0030	0199 B	3205 C		2563	14547	0085	00012	2364
0050	0105	3229 C		2589	14511	0130	00030	2119
0075	0038	3248 B		2608	14488	0181	00063	1941
0100	0007	3273 B		2630	14481	0228	00104	1729
0125	0004	3286 E		2640	14486	0270	00153	1630
0150	0012 B	3292 F		2644	14494	0310	00210	1591
0175	0031 D	3299 I		2649	14508	0350	00276	1544
0200	0137 I	3335 I		2672	14565	0386	00345	1336
0225	0271 D	3376 I		2694	14634	0417	00413	1132

C-REF-NO 006	YR 1963	DEPTH 47	WAVES 1 XX	AIR T	VIS
CONS. NO 026	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 49-220N	DAY 18	NO.DPTH 5	WND-DIR 180	WW-CODE	
LON 63-382W	HR 04.9	W-COLOR	WND-SPD 10	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1014.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
051	0000	025 B	31975		2554	14563
051	0009	0228	31955		2554	14555
051	0018	0168	32113		2571	14532
051	0027	0076 B	32392		2599	14496
051	0036	0061	32454		2605	14491

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0250 B	31975		2554	14563	0000	00000	2455
0010	0223	31965		2555	14553	0025	00001	2443
0020	0146 B	3218 C		2578	14523	0048	00005	2229
0030	0081 E	3238 I		2598	14498	0070	00010	2038

C-REF-NO 006	YR 1963	DEPTH 329	WAVES 1 XX	AIR T 02.5	VIS
CONS. NO 027	MONTH 11	MXSAMPD 03	WAVES 2 XX	WET B 02.0	STN
LAT 49-053N	DAY 18	NO.DPTH 13	WND-DIR 180	WW-CODE 02	
LON 64-048W	HR 08.3	W-COLOR	WND-SPD 05	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1011.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
090	0000	037 B	30374		2416	14594
090	0010	0362	30371		2417	14592
090	0020	0405 B	30717		2440	14616
090	0030	0532	31263		2471	14678
090	0040	0252	31503		2516	14564
090	0050	0131	31952		2560	14518
090	0075	0048	32429		2603	14492
085	0099	0037	32600		2618	14493
085	0149	0105	33182		2660	14540
085	0198	0276	33790		2696	14632
085	0247	0405				
085	0297	0466	34592		2741	14740
085	0312	0474	34669		2746	14746

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0370 B	30374		2416	14594	0000	00000	3763
0010	0362	30371		2417	14592	0038	00002	3758
0020	0405 B	30717		2440	14616	0074	00008	3535
0030	0532	31263		2471	14678	0109	00016	3249
0050	0131	31952		2560	14518	0165	00039	2393
0075	0048	32429		2603	14492	0220	00073	1983
0100	0037	32610		2618	14493	0268	00116	1839
0125	0058	3288 D		2639	14511	0312	00166	1643
0150	0108	33195		2661	14542	0351	00221	1434
0175	0192 C	3351 C		2681	14587	0385	00277	1254
0200	0282	3376 I		2694	14634	0415	00335	1138
0225	0354	3400 I		2706	14672	0442	00394	1028
0250	0406 B	3422 I		2718	14702	0467	00454	0919
0300	0468	3459 B		2741	14741	0508	00569	0711

C-REF-NO 006	YR 1963	DEPTH 301	WAVES 1 XX	AIR T 03.2	VIS
CONS. NO 028	MONTH 11	MXSAMPD 03	WAVES 2 XX	WET B 02.0	STN
LAT 49-023N	DAY 18	NO.DPTH 12	WND-DIR 180	WW-CODE 02	
LON 64-084W	HR 09.9	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
102	0000	036 B	30579		2434	14592
102	0010	0350	30560		2433	14589
102	0020	0352 B	30645		2440	14593
102	0030	0380	31051		2469	14612
102	0040	0278	31299		2498	14573
102	0049	0258	31723		2533	14571
102	0074	0090	32205		2583	14507
102	0098	0050	32540		2612	14498
102	0148	0071	33004		2648	14522
102	0197	0254	33699		2691	14621
102	0246	0384	34194		2718	14691
102	0290	0443	34478		2735	14727

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0360 B	30579		2434	14592	0000	00000	3599
0010	0350	30560		2433	14589	0036	00002	3605
0020	0352 B	30645		2440	14593	0072	00007	3543
0030	0380	31051		2469	14612	0106	00016	3261
0050	0252	3175 B		2536	14569	0166	00040	2625
0075	0087	32221		2584	14506	0226	00077	2162
0100	0048	3256 B		2614	14497	0277	00123	1883
0125	0042	3280 H		2633	14502	0322	00174	1700
0150	0077	33032		2650	14526	0363	00232	1539
0175	0165 D	3339 F		2673	14574	0399	00292	1329
0200	0264	33735		2693	14626	0430	00351	1143
0225	0336	34006		2708	14665	0457	00410	1006
0250	0389	34228		2721	14695	0481	00468	0894

C-REF-NO 006	YR 1963	DEPTH 292	WAVES 1 XX	AIR T 03.2	VIS
CONS. NO 029	MONTH 11	MXSAMPD 03	WAVES 2 XX	WET B 02.2	STN
LAT 49-008N	DAY 18	NO.DPTH 12	WND-DIR 230	WW-CODE 69	
LON 64-102W	HR 11.0	W-COLOR	WND-SPD 02	CLD-TPE 7	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
117	0000	036 B	30720		2445	14594
117	0010	0349	30716		2445	14591
117	0020	0360	30814		2452	14599
117	0030	0364	30861		2456	14602
117	0040	0370	31056		2471	14609
117	0050	0277	31538		2517	14577
117	0075	0123	32155		2577	14522
113	0098	0071	32437		2603	14506
113	0148	0059	32984		2647	14516
113	0197	0284	33807		2697	14635
113	0246	0379	34177		2718	14689
113	0286	0435	34438		2732	14723

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SCMT	SOUND	DELTA-D	POT.EN	SVA
0000	0360 B	30720		2445	14594	0000	00000	3492
0010	0349	30716		2445	14591	0035	00002	3487
0020	0360	30814		2452	14599	0070	00007	3422
0030	0364	30861		2456	14602	0104	00016	3390
0050	0277	31538		2517	14577	0166	00041	2808
0075	0123	32155		2577	14522	0230	00081	2234
0100	0067	32457		2604	14505	0283	00128	1971
0125	0041 B	3272 E		2627	14500	0330	00181	1757
0150	0067 B	3302 B		2650	14521	0371	00240	1543
0175	0177 H	3345 I		2677	14580	0407	00299	1290
0200	0292	3384 B		2699	14640	0437	00356	1091
0225	0348 B	3405 E		2710	14671	0463	00413	0985
0250	0400 E	3426 I		2722	14700	0487	00470	0879

C-REF-NO 006	YR 1963	DEPTH 256	WAVES 1 XX	AIR T 02.9	VIS
CONS. NO 030	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 01.5	STN
LAT 48-598N	DAY 18	NO.DPTH 11	WND-DIR 200	WW-CODE	
LON 64-124W	HR 12.2	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
126	0000	028 B	30388		2425	14555
126	0009	0296	30492		2432	14565
126	0018	0320	30612		2440	14578
126	0027	0342	30736		2448	14591
126	0036	0350	30785		2451	14596
126	0045	0300	30776		2454	14576
126	0068	0291	31512		2514	14586
126	0091	0097	32216		2583	14513
126	0136	0048	32824		2635	14507
126	0181	0174	33440		2676	14580
126	0218	0304	33891		2702	14649

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0280 B	30388		2425	14555	0000	00000	3681
0010	0299	30505		2433	14566	0037	00002	3606
0020	0326	30643		2442	14581	0072	00007	3523
0030	0349	30760		2449	14595	0108	00016	3454
0050	0299 E	3089 I		2464	14578	0176	00044	3314
0075	0236 E	3174 C		2536	14566	0250	00091	2622
0100	0063 D	3238 I		2598	14502	0309	00142	2029
0125	0032 D	3272 I		2628	14496	0356	00197	1750
0150	0076 C	33019		2649	14525	0398	00255	1548
0175	0151 B	33360		2672	14567	0434	00315	1338
0200	0222 D	3367 B		2691	14607	0466	00375	1158

C-REF-NO 006	YR 1963	DEPTH 170	WAVES 1 XX	AIR T 02.3	VIS
CONS. NO 031	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B 02.1	STN
LAT 48-586N	DAY 18	NO.DPTH 9	WND-DIR 290	WW-CODE	
LON 64-145W	HR 13.2	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
134	0000	028 B	30372		2424	14555
134	0010	0297	30496		2432	14565
134	0020	0303	30570		2438	14571
134	0030	0306	30590		2439	14574
134	0040	0304	30682		2447	14576
134	0050	0308	30705		2448	14580
134	0075	0254	31362		2505	14569
134	0100	0113	32304		2590	14523
134	0150	0116	33134		2656	14544

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0280 B	30372		2424	14555	0000	00000	3693
0010	0297	30496		2432	14565	0037	00002	3612
0020	0303	30570		2438	14571	0073	00007	3560
0030	0306	30590		2439	14574	0108	00017	3548
0050	0308	30705		2448	14580	0179	00045	3462
0075	0254	31362		2505	14569	0259	00096	2924
0100	0113	32304		2590	14523	0323	00151	2114
0125	0124 I	3270 I		2620	14538	0372	00208	1823
0150	0116	33134		2656	14544	0414	00266	1486

C-REF-NO 006	YR 1963	DEPTH 36	WAVES 1 XX	AIR T 02.3	VIS
CONS. NO 032	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 02.1	STN
LAT 48-576N	DAY 18	NO.DPTH 4	WND-DIR 310	WW-CODE	
LON 64-172W	HR 13.9	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
140	0000	031 B	30347		2419	14567
140	0010	0278	30391		2425	14556
140	0020	0308	30572		2437	14573
140	0030	0310	30600		2440	14576

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0310 B	30347		2419	14567	0000	00000	3734
0010	0278	30391		2425	14556	0037	00002	3677
0020	0308	30572		2437	14573	0074	00007	3563
0030	0310	30600		2440	14576	0109	00017	3543

C-REF-NO 006	YR 1963	DEPTH 265	WAVES 1 XX	AIR T	VIS
CONS. NO 033	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B	STN
LAT 48-598N	DAY 18	NO.DPTH 11	WND-DIR 300	WW-CODE	
LON 64-120W	HR 15.4	W-COLOR	WND-SPD 10	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
160	0000	033 B	30620		2439	14580
160	0010	0314	30597		2439	14574
160	0020	0343	30712		2446	14590
160	0030	0361	30786		2450	14600
160	0040	0374	30973		2464	14610
160	0050	0347	31092		2475	14602
157	0070	0326	31364		2499	14599
157	0087	0188	31777		2543	14548
157	0120	0049	32415		2602	14499
157	0154	0052	32881		2639	14513
157	0187	0190	33475		2678	14588

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0330 B	30620		2439	14580	0000	00000	3543
0010	0314	30597		2439	14574	0036	00002	3548
0020	0343	30712		2446	14590	0071	00007	3485
0030	0361	30786		2450	14600	0106	00016	3444
0050	0347	31092		2475	14602	0173	00043	3202
0075	0289 C	3148 C		2511	14586	0249	00092	2862
0100	0115	32052		2569	14521	0314	00149	2307
0125	0040	3249 C		2608	14497	0367	00210	1935
0150	0044	3283 B		2635	14508	0413	00274	1676
0175	0124	3328 F		2667	14554	0451	00337	1379

C-REF-NO 006	YR 1963	DEPTH 45	WAVES 1 XX	AIR T 02.8	VIS
CONS. NO 034	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 01.8	STN
LAT 48-576N	DAY 18	NO.DPTH 5	WND-DIR 290	WW-CODE 01	
LON 64-168W	HR 17.0	W-COLOR	WND-SPD 06	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
171	0000	028 B	30363		2423	14555
171	0010	0270	30345		2422	14552
171	0020	0278	30411		2427	14558
171	0030	0304	30589		2439	14573
171	0039	0303	30598		2440	14574

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0280 B	30363		2423	14555	0000	00000	3700
0010	0270	30345		2422	14552	0037	00002	3706
0020	0278	30411		2427	14558	0074	00008	3662
0030	0304	30589		2439	14573	0110	00017	3547

C-REF-NO 006	YR 1963	DEPTH 265	WAVES 1 XX	AIR T 03.5	VIS
CONS. NO 035	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 02.5	STN
LAT 48-598N	DAY 18	NO.DPTH 11	WND-DIR 290	WW-CODE 02	
LON 64-118W	HR 18.1	W-COLOR	WND-SPD 16	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
188	0000	035 B	30719		2446	14590
188	0009	0347	30709		2445	14590
188	0019	0348	30711		2445	14592
188	0028	0386	30924		2459	14612
188	0038	0389	30949		2460	14616
188	0047	0336	31068		2475	14596
188	0070	0254	31594		2523	14571
184	0085	0247	31606		2525	14571
184	0114	0082	32325		2593	14512
184	0142	0023	32559		2615	14493
184	0173	0099	33163		2659	14541

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0350 B	30719		2446	14590	0000	00000	3485
0010	0346	30703		2445	14589	0035	00002	3494
0020	0352	3073 B		2447	14594	0070	00007	3476
0030	0391	3093 C		2459	14615	0104	00016	3359
0050	0321	3115 F		2482	14591	0170	00042	3140
0075	0253 B	3160 F		2524	14572	0244	00089	2743
0100	0168 F	3195 I		2558	14543	0309	00147	2417
0125	0046	3243 I		2603	14499	0364	00210	1983
0150	0033	3282 I		2636	14502	0410	00275	1674
0175	0108	3319 C		2661	14546	0449	00339	1438

C-REF-NO 006	YR 1963	DEPTH 43	WAVES 1 XX	AIR T 03.2	VIS
CONS. NO 036	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 01.7	STN
LAT 48-574N	DAY 18	NO.DPTH 5	WND-DIR 290	WW-CODE	
LON 64-169W	HR 19.8	W-COLOR	WND-SPD 10	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
201	0000	029 B	30458		2430	14560
201	0010	0286	30435		2428	14560
201	0019	0289	30475		2431	14563
201	0029	0294	30520		2434	14567
201	0039	0299	30574		2438	14572

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0290 B	30458		2430	14560	0000	00000	3635
0010	0286	30435		2428	14560	0037	00002	3650
0020	0289	30479		2432	14563	0073	00007	3619
0030	0294	30526		2435	14568	0109	00017	3587

C-REF-NO 006	YR 1963	DEPTH 261	WAVES 1 XX	AIR T 03.4	VIS
CONS. NO 037	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B 02.0	STN
LAT 48-594N	DAY 18	NO.DPTH 11	WND-DIR 290	WW-CODE	
LON 64-120W	HR 21.1	W-COLOR	WND-SPD 12	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
218	0000	035 B	30758		2449	14590
218	0009	0350	30740		2447	14591
218	0019	0350	30735		2447	14593
218	0028	0351	30734		2447	14595
218	0038	0352	30749		2448	14597
218	0047	0373	31014		2467	14611
214	0057	0321	31233		2489	14593
214	0070	0270	31345		2502	14575
214	0094	0125	32036		2567	14524
214	0118	0069	32475		2606	14509
214	0142	0058	32921		2642	14514

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0350 B	30758		2449	14590	0000	00000	3455
0010	0350	30739		2447	14592	0035	00002	3470
0020	0350	30734		2447	14593	0070	00007	3474
0030	0350	3073 C		2446	14595	0105	00016	3482
0050	0361 B	31090		2474	14608	0172	00043	3215
0075	0239 B	3147 H		2515	14564	0248	00091	2828
0100	0105	3216 C		2578	14518	0311	00147	2221
0125	0054 B	3265 H		2621	14505	0362	00205	1818

C-REF-NO 006	YR 1963	DEPTH 40	WAVES 1 XX	AIR T 02.0	VIS
CONS. NO 038	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 00.5	STN
LAT 48-574N	DAY 19	NO.DPTH 5	WND-DIR 310	WW-CODE 01	
LON 64-168W	HR 12.3	W-COLOR	WND-SPD 09	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1018.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
125	0000	028 B	30542		2437	14557
125	0010	0287	30524		2435	14561
125	0020	0291	30533		2436	14565
125	0030	0305	30596		2440	14573
125	0039	0311	30620		2441	14578

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0280 B	30542		2437	14557	0000	00000	3564
0010	0287	30524		2435	14561	0036	00002	3583
0020	0291	30533		2436	14565	0072	00007	3579
0030	0305	30596		2440	14573	0108	00017	3542

C-REF-NO 006	YR 1963	DEPTH 268	WAVES 1 XX	AIR T 01.8	VIS
CONS. NO 039	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 00.3	STN
LAT 48-599N	DAY 19	NO.DPTH 4	WND-DIR 310	WW-CODE 02	
LON 64-126W	HR 13.5	W-COLOR	WND-SPD 09	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1018.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
138	0100	0099 B	32165		2579	14515
138	0130	0017	32634		2621	14489
138	0159	0098	33057		2651	14537
138	0191	0278	33811		2698	14632

C-REF-NO 006	YR 1963	DEPTH 45	WAVES 1 XX	AIR T 01.5	VIS
CONS. NO 040	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 00.0	STN
LAT 48-578N	DAY 19	NO.DPTH 5	WND-DIR 310	WW-CODE 03	
LON 64-170W	HR 15.1	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
153	0000	030 B	30586		2439	14566
153	0010	0294	30600		2441	14565
153	0020	0297	30555		2437	14568
153	0030	0299	30585		2439	14571
153	0039	0299	30581		2439	14572

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0300 B	30586		2439	14566	0000	00000	3546
0010	0294	30600		2441	14565	0036	00002	3531
0020	0297	30555		2437	14568	0071	00007	3567
0030	0299	30585		2439	14571	0107	00016	3546

C-REF-NO 006	YR 1963	DEPTH 259	WAVES 1 XX	AIR T 02.0	VIS
CONS. NO 041	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 00.6	STN
LAT 49-003N	DAY 19	NO.DPTH 12	WND-DIR 320	WW-CODE	
LON 64-132W	HR 16.2	W-COLOR	WND-SPD 09	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1018.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
168	0000	035 B	30748		2448	14590
168	0009	0344	30749		2448	14589
168	0019	0345	30746		2448	14591
168	0028	0345	30797		2452	14593
168	0037	0366	30847		2454	14604
168	0046	0464	31256		2477	14653
168	0070	0295	31493		2512	14588
165	0083	0226	31868		2547	14565
168	0093	0030	32238		2589	14484
165	0116	0064	32469		2606	14506
165	0148	0065 B	32894		2640	14518
165	0179	0205	33527		2681	14594

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0350 B	30748		2448	14590	0000	00000	3463
0010	0344	30747		2448	14589	0035	00002	3459
0020	0345	30750		2449	14591	0070	00007	3457
0030	0345	3079 D		2452	14594	0104	00016	3426
0050	0456 H	3132 I		2483	14651	0170	00043	3131
0075	0280 E	31620		2523	14584	0244	00089	2749
0100	0006 I	3235 I		2599	14475	0304	00142	2022
0125	0060 D	3257 B		2614	14507	0353	00199	1880
0150	0101 I	3295 D		2642	14535	0397	00260	1619
0175	0188 B	33438		2675	14585	0434	00321	1306

C-REF-NO 006	YR 1963	DEPTH 64	WAVES 1 XX	AIR T 02.0	VIS
CONS. NO 042	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 00.5	STN
LAT 48-575N	DAY 19	NO.DPTH 5	WND-DIR 320	WW-CODE	
LON 64-166W	HR 17.8	W-COLOR	WND-SPD 12	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1018.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
178	0000	030 B	30599		2440	14566
178	0010	0296	30555		2437	14566
178	0020	0297	30558		2437	14568
178	0030	0310	30601		2440	14576
178	0040	0334	30705		2446	14589

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0300 B	30599		2440	14566	0000	00000	3536
0010	0296	30555		2437	14566	0036	00002	3566
0020	0297	30558		2437	14568	0072	00007	3565
0030	0310	30601		2440	14576	0107	00016	3542

C-REF-NO 006	YR 1963	DEPTH 261	WAVES 1 XX	AIR T	VIS
CONS. NO 043	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 49-000N	DAY 19	NO.DPTH 8	WND-DIR 320	WW-CODE	
LON 64-128W	HR 18.5	W-COLOR	WND-SPD 12	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
187	0000	036 B	30749		2447	14594
187	0010	0343	30723		2447	14588
187	0019	0345	30727		2447	14591
187	0029	0343	30755		2449	14592
187	0038	0470	31224		2474	14654
187	0047	0465 B	31251		2477	14653
187	0071	0289	31593		2520	14587
187	0095	0050	32238		2588	14493

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0360 B	30749		2447	14594	0000	00000	3470
0010	0343	30723		2447	14588	0035	00002	3476
0020	0342	3072 C		2446	14589	0070	00007	3479
0030	0357 B	3081 E		2452	14599	0105	00016	3425
0050	0451 C	31275		2480	14648	0171	00043	3159
0075	0279 H	3167 C		2527	14584	0245	00089	2713

C-REF-NO 006	YR 1963	DEPTH 45	WAVES 1 XX	AIR T 01.8	VIS
CONS. NO 044	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 00.6	STN
LAT 48-576N	DAY 19	NO.DPTH 5	WND-DIR 320	WW-CODE	
LON 64-168W	HR 19.6	W-COLOR	WND-SPD 10	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1019.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	030 B	30577		2438	14566
198	0010	0298	30554		2437	14567
198	0020	0302	30578		2438	14570
198	0030	0312	30615		2441	14577
198	0039	0347	30760		2449	14595

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0300 B	30577		2438	14566	0000	00000	3552
0010	0298	30554		2437	14567	0036	00002	3568
0020	0302	30578		2438	14570	0072	00007	3553
0030	0312	30615		2441	14577	0107	00016	3533

C-REF-NO 006	YR 1963	DEPTH 246	WAVES 1 XX	AIR T 01.6	VIS
CONS. NO 045	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B 00.5	STN
LAT 48-597N	DAY 19	NO.DPTH 8	WND-DIR 320	WW-CODE 02	
LON 64-123W	HR 20.5	W-COLOR	WND-SPD 09	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.0	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
207	0000	034 B	30669		2442	14585
207	0009	0332	30664		2443	14583
207	0019	0339	30717		2446	14588
207	0028	0351	30801		2452	14596
207	0038	0468	31204		2473	14652
210	0047	0468	31241		2476	14654
210	0070	0287	31617		2522	14586
210	0094	0101	32168		2579	14515

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340 B	30669		2442	14585	0000	00000	3514
0010	0332	30667		2443	14583	0035	00002	3510
0020	0338	3072 B		2447	14588	0070	00007	3475
0030	0375 C	3088 F		2456	14607	0105	00016	3382
0050	0452 C	3127 B		2480	14648	0171	00043	3160
0075	0288 I	3168 H		2527	14588	0244	00089	2709

C-REF-NO 006	YR 1963	DEPTH 45	WAVES 1 XX	AIR T 01.0	VIS
CONS. NO 046	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B -00.5	STN
LAT 48-574N	DAY 19	NO.DPTH 5	WND-DIR 320	WW-CODE 01	
LON 64-177W	HR 22.0	W-COLOR	WND-SPD 08	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
221	0000	029 B	30550		2437	14561
221	0010	0290	30539		2436	14563
221	0020	0308	30610		2440	14573
221	0030	0342	30742		2448	14591
221	0040	0370	30869		2456	14607

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0290 B	30550		2437	14561	0000	00000	3565
0010	0290	30539		2436	14563	0036	00002	3574
0020	0308	30610		2440	14573	0072	00007	3534
0030	0342	30742		2448	14591	0107	00016	3462

C-REF-NO 006	YR 1963	DEPTH 265	WAVES 1 XX	AIR T 01.2	VIS
CONS. NO 047	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B -00.5	STN
LAT 48-596N	DAY 19	NO.DPTH 8	WND-DIR 320	WW-CODE	
LON 64-122W	HR 22.8	W-COLOR	WND-SPD 07	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
231	0000	033 B	30707		2446	14581
231	0010	0329	30704		2446	14582
231	0019	0332	30700		2446	14585
231	0029	0365	30834		2453	14602
231	0039	0467	31156		2469	14652
231	0048	0413	31118		2471	14630
231	0072	0226	31845		2545	14563
231	0097	0023	32249		2590	14481

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0330 B	30707		2446	14581	0000	00000	3478
0010	0329	30704		2446	14582	0035	00002	3479
0020	0333	30706		2446	14585	0070	00007	3481
0030	0377 B	3087 C		2455	14608	0104	00016	3395
0050	0399	3116 G		2476	14625	0171	00043	3195
0075	0210 C	3168 I		2533	14554	0244	00089	2651

C-REF-NO 006	YR 1963	DEPTH 31	WAVES 1 XX	AIR T	VIS
CONS. NO 048	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 48-575N	DAY 20	NO.DPTH 4	WND-DIR 290	WW-CODE	
LON 64-175W	HR 00.2	W-COLOR	WND-SPD 07	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1021.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
004	0000	029 B	30597		2441	14562
004	0010	0298	30612		2441	14567
004	0020	0329	30697		2446	14584
004	0030	0344 B	30763		2450	14593

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0290 B	30597		2441	14562	0000	00000	3530
0010	0298	30612		2441	14567	0035	00002	3525
0020	0329	30697		2446	14584	0071	00007	3485
0030	0344 B	30763		2450	14593	0106	00016	3447

C-REF-NO 006	YR 1963	DEPTH 261	WAVES 1 XX	AIR T 01.5	VIS
CONS. NO 049	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B 00.2	STN
LAT 49-000N	DAY 20	NO.DPTH 8	WND-DIR 300	WW-CODE	
LON 64-122W	HR 01.2	W-COLOR	WND-SPD 05	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
014	0000	034 B	30700		2445	14585
014	0010	0326	30689		2445	14581
014	0020	0330	30696		2445	14584
014	0030	0388	30903		2457	14613
014	0039	0383	30958		2462	14613
014	0049	0392	31070		2470	14620
014	0074	0194	31973		2558	14551
014	0098	0002	32322		2597	14473

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340 B	30700		2445	14585	0000	00000	3491
0010	0326	30689		2445	14581	0035	00002	3488
0020	0330	30696		2445	14584	0070	00007	3486
0030	0388	30903		2457	14613	0105	00016	3379
0050	0387	3110 C		2473	14619	0171	00043	3229
0075	0231 I	3179 I		2541	14565	0244	00089	2582
0100	-0023 B	3237 G		2602	14462	0302	00140	1996

C-REF-NO 006	YR 1963	DEPTH 54	WAVES 1 XX	AIR T 00.1	VIS
CONS. NO 050	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B -01.3	STN
LAT 48-574N	DAY 20	NO.DPTH 6	WND-DIR 200	WW-CODE	
LON 64-170W	HR 02.2	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
025	0000	032 B	30777		2453	14578
025	0005	0343	30752		2449	14588
025	0015	0344	30755		2449	14590
025	0025	0345	30752		2449	14592
025	0035	0344	30785		2451	14594
025	0045	0345	30750		2448	14595

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0320 B	30777		2453	14578	0000	00000	3417
0010	0347 B	30749		2448	14591	0035	00002	3460
0020	0345	30752		2449	14591	0069	00007	3456
0030	0345	3077 B		2450	14593	0104	00016	3442

C-REF-NO 006	YR 1963	DEPTH 256	WAVES 1 XX	AIR T 01.2	VIS
CONS. NO 051	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B -00.4	STN
LAT 49-000N	DAY 20	NO.DPTH 8	WND-DIR 240	WW-CODE	
LON 64-125W	HR 03.2	W-COLOR	WND-SPD 04	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1020.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
034	0000	033 B	30721		2447	14581
034	0010	0318	30710		2448	14577
034	0020	0375	30870		2455	14606
034	0030	0384	30868		2454	14611
034	0040	0381	30880		2456	14612
034	0050	0381	31151		2477	14617
034	0075	0196	31964		2557	14552
034	0100	0022	32400		2602	14483

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0330 B	30721		2447	14581	0000	00000	3467
0010	0318	30710		2448	14577	0035	00002	3466
0020	0375	30870		2455	14606	0069	00007	3393
0030	0384	30868		2454	14611	0103	00016	3402
0050	0381	31151		2477	14617	0170	00043	3187
0075	0196	31964		2557	14552	0240	00087	2426
0100	0022	32400		2602	14483	0296	00136	1992

C-REF-NO 006	YR 1963	DEPTH 73	WAVES 1 XX	AIR T	VIS
CONS. NO 052	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 48-002N	DAY 21	NO.DPTH 7	WND-DIR 290	WW-CODE 01	
LON 63-101W	HR 02.8	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1032.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
031	0000	041 B	30243		2402	14609
031	0007	0406	30233		2402	14608
031	0017	0408	30239		2402	14611
031	0027	0408	30263		2404	14613
031	0037	0416	30540		2425	14622
031	0047	0453	31059		2463	14646
031	0057	0046	32353		2597	14487

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0410 B	30243		2402	14609	0000	00000	3896
0010	0406	30233		2402	14609	0039	00002	3901
0020	0408	3023 C		2402	14611	0078	00008	3903
0030	0408	30320		2409	14614	0117	00018	3838
0050	0298 I	3146 I		2509	14585	0185	00045	2886

C-REF-NO 006	YR 1963	DEPTH 73	WAVES 1 XX	AIR T 04.0	VIS
CONS. NO 053	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B 01.7	STN
LAT 47-101N	DAY 21	NO.DPTH 6	WND-DIR 220	WW-CODE 02	
LON 62-401W	HR 07.8	W-COLOR	WND-SPD 02	CLD-TPE	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1034.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
081	0000	054 B	30301		2394	14664
081	0010	0540	30280		2392	14666
081	0020	0541	30280		2392	14668
081	0030	0541	30281		2392	14669
081	0040	0265	31312		2500	14567
081	0050	0022	32087		2577	14471

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0540 B	30301		2394	14664	0000	00000	3978
0010	0540	30280		2392	14665	0040	00002	3995
0020	0541	30280		2392	14668	0080	00008	3996
0030	0541	30281		2392	14669	0120	00018	3996
0050	0022	32087		2577	14471	0183	00042	2232

C-REF-NO 006	YR 1963	DEPTH 274	WAVES 1 XX	AIR T 04.3	VIS
CONS. NO 054	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 03.3	STN
LAT 49-300N	DAY 23	NO.DPTH 11	WND-DIR 160	WW-CODE 02	
LON 59-300W	HR 17.0	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1017.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
174	0000	062 B	31696		2494	14715
174	0010	0631	31673		2491	14721
174	0020	0633	31672		2491	14723
174	0029	0632	31672		2491	14724
174	0039	0632	31680		2492	14726
174	0049	0058	32268		2590	14490
174	0073	0003	32612		2620	14473
171	0104	0018	32915		2644	14489
171	0147	0217	33525		2680	14594
171	0191	0416	34198		2715	14696
171	0235	0487	34549		2735	14737

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0620 B	31696		2494	14715	0000	00000	3019
0010	0631	31673		2491	14721	0031	00002	3051
0020	0633	31672		2491	14723	0061	00006	3055
0030	0645 D	3166 C		2489	14730	0092	00014	3079
0050	0036 F	3230 C		2593	14480	0144	00034	2078
0075	0001	32632		2622	14473	0193	00065	1805
0100	0010	3288 B		2641	14485	0236	00104	1622
0125	0103 D	3320 C		2662	14535	0274	00148	1430
0150	0233	3358 B		2683	14602	0308	00195	1236
0175	0351 C	3397 E		2704	14663	0337	00243	1044
0200	0420 F	3423 I		2718	14699	0361	00290	0918
0225	0472 B	3447 D		2731	14728	0383	00337	0801

C-REF-NO 006	YR 1963	DEPTH 137	WAVES 1 XX	AIR T 05.9	VIS
CONS. NO 055	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B 05.5	STN
LAT 50-325N	DAY 23	NO.DPTH 8	WND-DIR 180	WW-CODE 63	
LON 58-300W	HR 23.5	W-COLOR	WND-SPD 12	CLD-TPE 7	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1004.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
238	0000	034 B	31307		2493	14593
238	0010	0314	31317		2496	14584
238	0018	0315	31331		2497	14586
238	0026	0318	31398		2502	14589
238	0034	0294	31561		2517	14582
238	0043	0264	31677		2529	14572
238	0063	0136	32152		2576	14526
238	0084	0097	32318		2592	14514

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0340 B	31307		2493	14593	0000	00000	3032
0010	0314	31317		2496	14584	0030	00002	3003
0020	0317	31341		2498	14587	0060	00006	2988
0030	0308	3148 B		2509	14587	0090	00014	2878
0050	0219 C	3184 H		2546	14556	0144	00036	2533
0075	0122 E	3222 I		2582	14522	0204	00073	2185

C-REF-NO 006	YR 1963	DEPTH 27	WAVES 1 24X2	AIR T -00.5	VIS
CONS. NO 056	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B -02.0	STN
LAT 51-287N	DAY 25	NO.DPTH 3	WND-DIR 240	WW-CODE 02	
LON 56-181W	HR 19.1	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.0	CLD-AMT 3	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
192	0000	019 8	31915		2553	14536
192	0010	0178	31924		2555	14532
192	0020	0179	31914		2554	14534

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0190 B	31915		2553	14536	0000	00000	2459
0010	0178	31924		2555	14532	0025	00001	2444
0020	0179	31914		2554	14534	0049	00005	2452

C-REF-NO 006	YR 1963	DEPTH 58	WAVES 1	AIR T -00.5	VIS
CONS. NO 057	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B -02.0	STN
LAT 51-315N	DAY 25	NO.DPTH 5	WND-DIR 260	WW-CODE 03	
LON 56-204W	HR 19.8	W-COLOR	WND-SPD 11	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	010 B	31881		2556	14495
199	0010	0095	31891		2557	14495
199	0019	0115	31976		2563	14506
199	0029	0115	32006		2566	14508
199	0048	0093	32337		2593	14506

#WAVES INCONSISTENT

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0100 B	31881		2556	14495	0000	00000	2430
0010	0095	31891		2557	14495	0024	00001	2420
0020	0116	31978		2563	14507	0048	00005	2364
0030	0119 B	3206 I		2569	14511	0072	00011	2305

C-REF-NO 006	YR 1963	DEPTH 45	WAVES 1 25X3	AIR T -01.0	VIS
CONS. NO 058	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B -03.0	STN
LAT 51-344N	DAY 25	NO.DPTH 5	WND-DIR 250	WW-CODE 02	
LON 56-236W	HR 20.4	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
206	0000	009 B	31857		2555	14490
206	0010	0094	31838		2553	14494
206	0020	0092	31859		2555	14495
206	0030	0085	32371		2597	14500
206	0040	0084	32399		2599	14502

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0090 B	31857		2555	14490	0000	00000	2443
0010	0094	31838		2553	14494	0025	00001	2459
0020	0092	31859		2555	14495	0049	00005	2442
0030	0085	32371		2597	14500	0072	00011	2048

C-REF-NO 006	YR 1963	DEPTH 54	WAVES 1 XX	AIR T -01.5	VIS
CONS. NO 059	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B -03.0	STN
LAT 51-376N	DAY 25	NO.DPTH 5	WND-DIR 250	WW-CODE 01	
LON 56-264W	HR 21.3	W-COLOR	WND-SPD 10	CLD-TPE 7	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.0	CLD-AMT 5	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
215	0000	009 B	31910		2559	14491
215	0010	0093	31861		2555	14493
215	0020	0095	31861		2555	14496
215	0030	0102	32056		2570	14503
215	0040	0094	32236		2585	14504

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0090 B	31910		2559	14491	0000	00000	2403
0010	0093	31861		2555	14493	0024	00001	2441
0020	0095	31861		2555	14496	0049	00005	2442
0030	0102	32056		2570	14503	0073	00011	2297

C-REF-NO 006	YR 1963	DEPTH 34	WAVES 1 XX	AIR T -01.5	VIS
CONS. NO 060	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B -03.0	STN
LAT 51-399N	DAY 25	NO.DPTH 4	WND-DIR 250	WW-CODE 70	
LON 56-284W	HR 21.9	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0000	008 B	31936		2562	14487
220	0010	0093	31922		2560	14494
220	0020	0093	31923		2560	14496
220	0025	0098	32024		2568	14500

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0080 B	31936		2562	14487	0000	00000	2377
0010	0093	31922		2560	14494	0024	00001	2395
0020	0093	31923		2560	14496	0048	00005	2394

C-REF-NO 006	YR 1963	DEPTH 91	WAVES 1 XX	AIR T -05.0	VIS
CONS. NO 061	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 51-277N	DAY 26	NO.DPTH 7	WND-DIR 300	WW-CODE 02	
LON 56-490W	HR 10.6	W-COLOR	WND-SPD 05	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1011.0	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
109	0000	006 B	31915		2561	14478
109	0010	0094	31862		2555	14494
109	0020	0093	31997		2566	14497
109	0030	0094	31997		2566	14499
109	0040	0093	31997		2566	14500
109	0050	0093	31998		2566	14502
109	0075	0093	32001		2566	14506

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0060 B	31915		2561	14478	0000	00000	2383
0010	0094	31862		2555	14494	0024	00001	2441
0020	0093	31997		2566	14497	0048	00005	2337
0030	0094	31997		2566	14499	0072	00011	2338
0050	0093	31998		2566	14502	0119	00030	2336
0075	0093	32001		2566	14506	0178	00068	2333

C-REF-NO 006	YR 1963	DEPTH 98	WAVES 1 XX	AIR T -05.0	VIS
CONS. NO 062	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 51-272N	DAY 26	NO.DPTH 7	WND-DIR 300	WW-CODE 61	
LON 56-486W	HR 11.2	W-COLOR	WND-SPD 05	CLD-TPE	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1011.0	CLD-AMT	HW

OBSERVED

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
115	0000	004 B	31867		2558	14468
115	0010	0091	31865		2556	14493
115	0020	0091	31948		2562	14495
115	0030	0092	31982		2565	14498
115	0040	0093	32029		2569	14501
115	0050	0092	32029		2569	14502
115	0075	0093	32033		2569	14506

INTERPOLATED

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0040 B	31867		2558	14468	0000	00000	2410
0010	0091	31865		2556	14493	0024	00001	2437
0020	0091	31948		2562	14495	0049	00005	2374
0030	0092	31982		2565	14498	0072	00011	2348
0050	0092	32029		2569	14502	0119	00030	2312
0075	0093	32033		2569	14506	0177	00068	2309

C-REF-NO 006	YR 1963	DEPTH 95	WAVES 1 XX	AIR T -05.5	VIS
CONS. NO 063	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 51-268N	DAY 26	NO.DPTH 7	WND-DIR 300	WW-CODE 02	
LON 56-480W	HR 11.8	W-COLOR	WND-SPD 06	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1012.0	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
120	0000	006 B	31880		2559	14477
120	0010	0091	31867		2556	14493
120	0020	0096	31861		2555	14496
120	0030	0094	31944		2562	14498
120	0040	0091	32027		2569	14500
120	0050	0092	32052		2571	14502
120	0075	0092	32128		2577	14507

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0060 B	31880		2559	14477	0000	00000	2410
0010	0091	31867		2556	14493	0024	00001	2436
0020	0096	31861		2555	14496	0049	00005	2443
0030	0094	31944		2562	14498	0073	00011	2378
0050	0092	32052		2571	14502	0120	00030	2294
0075	0092	32128		2577	14507	0177	00067	2236

C-REF-NO 006	YR 1963	DEPTH 54	WAVES 1 XX	AIR T -05.5	VIS
CONS. NO 064	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-258N	DAY 26	NO.DPTH 6	WND-DIR 270	WW-CODE 02	
LON 56-473W	HR 12.3	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1013.0	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
125	0000	005 B	31889		2560	14473
125	0010	0081	31941		2562	14489
125	0020	0087	31929		2561	14493
125	0030	0093	31973		2564	14498
125	0040	0093	32134		2577	14502
125	0050	0091	32238		2586	14504

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0050 B	31889		2560	14473	0000	00000	2398
0010	0081	31941		2562	14489	0024	00001	2374
0020	0087	31929		2561	14493	0048	00005	2386
0030	0093	31973		2564	14498	0072	00011	2356
0050	0091	32238		2586	14504	0117	00029	2152

C-REF-NO 006	YR 1963	DEPTH 54	WAVES 1 XX	AIR T -05.2	VIS
CONS. NO 065	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-250N	DAY 26	NO.DPTH 5	WND-DIR	WW-CODE 02	
LON 56-455W	HR 12.9	W-COLOR	WND-SPD	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1013.0	CLD-AMT 1	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
130	0000	008 B	31924		2561	14487
130	0010	0095	31915		2559	14495
130	0020	0098	31971		2564	14499
130	0030	0098 B	32007		2567	14501
130	0040	0094	32012		2567	14501

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0080 B	31924		2561	14487	0000	00000	2387
0010	0095	31915		2559	14495	0024	00001	2401
0020	0098	31971		2564	14499	0048	00005	2360
0030	0098 B	32007		2567	14501	0072	00011	2332

C-REF-NO 006	YR 1963	DEPTH 73	WAVES 1 XX	AIR T -04.5	VIS
CONS. NO 066	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-240N	DAY 26	NO.DPTH 5	WND-DIR 280	WW-CODE 03	
LON 56-443W	HR 13.2	W-COLOR	WND-SPD 10	CLD-TPE 8	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1013.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
134	0000	008 B	31932		2562	14487
134	0010	0105	31913		2559	14500
134	0020	0111	31915		2558	14504
134	0030	0112	31915		2558	14506
134	0040	0113	31956		2562	14509

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0080 B	31932		2562	14487	0000	00000	2380
0010	0105	31913		2559	14500	0024	00001	2408
0020	0111	31915		2558	14504	0048	00005	2410
0030	0112	31915		2558	14506	0073	00011	2410

C-REF-NO 006	YR 1963	DEPTH 91	WAVES 1	XX	AIR T -04.0	VIS
CONS. NO 067	MONTH 11	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 51-228N	DAY 26	NO.DPTH 7	WND-DIR 280		WW-CODE 02	
LON 56-428W	HR 13.7	W-COLOR	WND-SPD 07		CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1013.0		CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
138	0000	019 B	31744		2540	14534
138	0009	0204	31732		2538	14541
138	0019	0212	31758		2539	14547
138	0028	0198	31835		2546	14543
138	0038	0192	31854		2548	14542
138	0047	0178 C	31891		2552	14538
138	0070	0113	32176		2579	14517

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0190 B	31744		2540	14534	0000	00000	2589
0010	0206	31732		2538	14542	0026	00001	2608
0020	0211	31767		2540	14546	0052	00005	2585
0030	0197	31841		2547	14543	0078	00012	2520
0050	0173 B	3192 B		2555	14537	0128	00032	2442

C-REF-NO 006	YR 1963	DEPTH	82	WAVES 1	XX	AIR T -04.7	VIS
CONS. NO 068	MONTH 11	MXSAMPD	01	WAVES 2	XX	WET B	STN
LAT 51-224N	DAY 26	NO.DPTH	8	WND-DIR	280	WW-CODE 02	
LON 56-417W	HR 13.9	W-COLOR		WND-SPD	07	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO	1013.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
142	0000	021 B	31709		2536	14542
142	0009	0208	31758		2540	14543
142	0019	0211	31772		2540	14546
142	0028	0211	31793		2542	14548
142	0038	0205	31805		2544	14547
142	0047	0167	31958		2558	14534
142	0070	0129	32103		2572	14523
142	0080	0106	32239		2585	14516

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0210 B	31709		2536	14542	0000	00000	2629
0010	0208	31760		2540	14544	0026	00001	2589
0020	0211	31774		2541	14547	0052	00005	2580
0030	0212	3179 B		2542	14549	0078	00012	2569
0050	0160	3198 D		2561	14532	0128	00032	2390
0075	0112 B	3220 F		2581	14517	0186	00069	2196

C-REF-NO 006	YR 1963	DEPTH 73	WAVES 1 XX	AIR T -03.5	VIS
CONS. NO 069	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-218N	DAY 26	NO.DPTH 6	WND-DIR 270	WW-CODE 02	
LON 56-412W	HR 14.3	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1013.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
146	0000	020 B	31719		2537	14538
146	0010	0213	31702		2535	14545
146	0020	0217	31719		2536	14549
146	0030	0216	31753		2539	14550
146	0040	0169	31950		2558	14534
146	0050	0153	32034		2565	14529

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0200 B	31719		2537	14538	0000	00000	2614
0010	0213	31702		2535	14545	0026	00001	2636
0020	0217	31719		2536	14549	0053	00005	2626
0030	0216	31753		2539	14550	0079	00012	2599
0050	0153	32034		2565	14529	0129	00032	2344

C-REF-NO 006	YR 1963	DEPTH 18	WAVES 1 XX	AIR T -03.5	VIS
CONS. NO 070	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-212N	DAY 26	NO.DPTH 3	WND-DIR 270	WW-CODE 03	
LON 56-406W	HR 14.8	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1013.0	CLD-AMT 4	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
149	0000	020 B	31688		2535	14537
149	0005	0229	31657		2530	14551
149	0015	0227	31660		2530	14551

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0200 B	31688		2535	14537	0000	00000	2638

C-REF-NO 006	YR 1963	DEPTH 45	WAVES 1 XX	AIR T -01.0	VIS
CONS. NO 071	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET 8	STN
LAT 51-212N	DAY 26	NO.DPTH 4	WND-DIR 230	WW-CODE 03	
LON 56-410W	HR 16.6	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1011.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
168	0000	020 B	31722		2537	14538
168	0010	0224	31694		2533	14550
168	0020	0224	31697		2534	14551
168	0030	0226	31703		2534	14554

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0200 B	31722		2537	14538	0000	00000	2612
0010	0224	31694		2533	14550	0026	00001	2650
0020	0224	31697		2534	14551	0053	00005	2648
0030	0226	31703		2534	14554	0080	00012	2644

C-REF-NO 006	YR 1963	DEPTH 82	WAVES 1	XX	AIR T -00.2	VIS
CONS. NO 072	MONTH 11	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 51-223N	DAY 26	NO.DPTH 7	WND-DIR 230	WW-CODE 02		
LON 56-426W	HR 17.1	W-COLOR	WND-SPD 07	CLD-TPE 6		
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT 7	HW	

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
172	0000	019 B	31846		2548	14535
172	0010	0194	31844		2547	14538
172	0020	0194	31840		2547	14540
172	0030	0193	31848		2548	14541
172	0039	0191	31881		2551	14542
172	0049	0160	32013		2563	14532
172	0074	0123	32141		2576	14521

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0190 B	31846		2548	14535	0000	00000	2511
0010	0194	31844		2547	14538	0025	00001	2515
0020	0194	31840		2547	14540	0051	00005	2518
0030	0193	31848		2548	14541	0076	00012	2512
0050	0169 D	3198 I		2560	14536	0125	00032	2396
0075	0121	32148		2577	14521	0184	00069	2238

C-REF-NO 006	YR 1963	DEPTH 76	WAVES 1 XX	AIR T -00.5	VIS
CONS. NO 073	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 51-242N	DAY 26	NO.DPTH 7	WND-DIR 230	WW-CODE 02	
LON 56-446W	HR 17.8	W-COLOR	WND-SPD 12	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
179	0000	017 B	31880		2552	14527
179	0010	0176	31856		2550	14531
179	0019	0175	31859		2550	14532
179	0029	0152	31966		2560	14525
179	0039	0123	32042		2568	14514
179	0048	0106	32083		2572	14509
179	0058	0101	32109		2575	14508

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0170 B	31880		2552	14527	0000	00000	2472
0010	0176	31856		2550	14531	0025	00001	2494
0020	0173	31868		2551	14531	0050	00005	2484
0030	0149	31975		2561	14523	0075	00011	2387
0050	0104	32092		2573	14508	0121	00031	2271

C-REF-NO 006	YR 1963	DEPTH 64	WAVES 1 XX	AIR T 00.0	VIS
CONS. NO 074	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-244N	DAY 26	NO.DPTH 6	WND-DIR 230	WW-CODE 02	
LON 56-460W	HR 18.2	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
183	0000	016 B	31889		2553	14522
183	0009	0146	31898		2555	14518
183	0019	0140	31883		2554	14516
183	0028	0111	31908		2558	14505
183	0038	0089	31966		2564	14498
183	0047	0090	32102		2575	14501

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0160 B	31889		2553	14522	0000	00000	2459
0010	0146	31896		2555	14518	0025	00001	2445
0020	0137	31884		2554	14515	0049	00005	2449
0030	0105	31914		2559	14503	0074	00011	2407

C-REF-NO 006	YR 1963	DEPTH 54	WAVES 1 XX	AIR T -00.3	VIS
CONS. NO 075	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-264N	DAY 26	NO.DPTH 5	WND-DIR 240	WW-CODE 03	
LON 56-473W	HR 18.7	W-COLOR	WND-SPD 10	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1010.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
188	0000	008 B	31938		2562	14487
188	0010	0081	31917		2560	14489
188	0020	0084	31929		2561	14492
188	0030	0088	32115		2576	14498
188	0039	0089	32203		2583	14501

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0080 B	31938		2562	14487	0000	00000	2376
0010	0081	31917		2560	14489	0024	00001	2392
0020	0084	31929		2561	14492	0048	00005	2384
0030	0088	32115		2576	14498	0071	00011	2245

C-REF-NO 006	YR 1963	DEPTH 73	WAVES 1 XX	AIR T 00.0	VIS
CONS. NO 076	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-275N	DAY 26	NO.DPTH 6	WND-DIR 240	WW-CODE 02	
LON 56-495W	HR 19.2	W-COLOR	WND-SPD 12	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
192	0000	006 B	32023		2570	14479
192	0010	0088	32010		2567	14493
192	0020	0089	32033		2569	14496
192	0030	0090	32068		2572	14498
192	0039	0091	32074		2572	14500
192	0049	0090	32119		2576	14502

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0060 B	32023		2570	14479	0000	00000	2301
0010	0088	32010		2567	14493	0023	00001	2325
0020	0089	32033		2569	14496	0047	00005	2308
0030	0090	32068		2572	14498	0070	00011	2281
0050	0090	32123		2576	14502	0115	00029	2239

C-REF-NO 006	YR 1963	DEPTH 100	WAVES 1 XX	AIR T 00.7	VIS
CONS. NO 077	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 51-186N	DAY 26	NO.DPTH 7	WND-DIR 240	WW-CODE	
LON 56-580W	HR 20.5	W-COLOR	WND-SPD 15	CLD-TPE	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.0	CLD-AMT	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
207	0000	014 B	31940		2559	14514
207	0009	0125	31936		2559	14509
207	0019	0121	31943		2560	14509
207	0028	0113	31967		2563	14507
207	0038	0106	32000		2566	14506
207	0047	0098	32028		2568	14504
207	0070	0094	32036		2569	14506

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0140 B	31940		2559	14514	0000	00000	2408
0010	0124	31936		2559	14509	0024	00001	2402
0020	0120	31945		2560	14508	0048	00005	2392
0030	0112	31973		2563	14507	0072	00011	2366
0050	0098	32030		2568	14505	0119	00030	2315

C-REF-NO 006	YR 1963	DEPTH 64	WAVES 1 XX	AIR T 01.2	VIS
CONS. NO 078	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-135N	DAY 26	NO.DPTH 6	WND-DIR 240	WW-CODE 85	
LON 57-080W	HR 21.7	W-COLOR	WND-SPD 12	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
219	0000	027 B	31786		2537	14569
219	0010	0211	31765		2540	14545
219	0020	0211	31767		2540	14547
219	0030	0211	31776		2541	14548
219	0040	0185	31865		2550	14540
219	0050	0172	31935		2556	14536

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0270 B	31786		2537	14569	0000	00000	2613
0010	0211	31765		2540	14545	0026	00001	2587
0020	0211	31767		2540	14547	0052	00005	2585
0030	0211	31776		2541	14548	0078	00012	2579
0050	0172	31935		2556	14536	0129	00033	2432

C-REF-NO 006	YR 1963	DEPTH 124	WAVES 1 XX	AIR T 01.1	VIS
CONS. NO 079	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 51-230N	DAY 26	NO.DPTH 7	WND-DIR 240	WW-CODE 85	
LON 57-279W	HR 23.5	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
237	0000	010 B	31913		2559	14496
237	0010	0099	31895		2558	14497
237	0020	0099	31898		2558	14498
237	0029	0102	31916		2559	14501
237	0049	0113	31989		2564	14511
237	0073	0112	31994		2565	14514
237	0098	0112	31998		2565	14518

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0100 B	31913		2559	14496	0000	00000	2406
0010	0099	31895		2558	14497	0024	00001	2419
0020	0099	31898		2558	14498	0049	00005	2416
0030	0103	31920		2559	14502	0073	00011	2401
0050	0113	31990		2564	14511	0121	00031	2353
0075	0115	3201 C		2566	14516	0180	00069	2339
0100	0111	31995		2565	14518	0239	00122	2348

C-REF-NO 006	YR 1963	DEPTH 106	WAVES 1 XX	AIR T 01.8	VIS
CONS. NO 080	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 51-200N	DAY 27	NO.DPTH 7	WND-DIR 240	WW-CODE 85	
LON 57-235W	HR 00.2	W-COLOR	WND-SPD 09	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
005	0000	017 B	31940		2557	14527
005	0005	0170	31913		2555	14528
005	0014	0169	31917		2555	14529
005	0024	0165 B	31952		2558	14529
005	0043	0146	31954		2559	14524
005	0067	0122	31999		2565	14518
005	0091	0110	32008		2566	14516

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0170 B	31940		2557	14527	0000	00000	2427
0010	0170	31909		2554	14529	0025	00001	2450
0020	0167	31937		2557	14529	0049	00005	2427
0030	0160	3196 B		2559	14528	0073	00011	2408
0050	0138	31967		2561	14522	0122	00031	2386
0075	0119	3199 B		2564	14517	0181	00069	2354

C-REF-NO 006	YR 1963	DEPTH 118	WAVES 1 XX	AIR T			
CONS. NO 081	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B			VIS STN
LAT 51-155N	DAY 27	NO.DPTH 7	WND-DIR 240	WW-CODE	84		
LON 57-230W	HR 01.1	W-COLOR	WND-SPD 10	CLD-TPE	X		
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1005.0	CLD-AMT	8		HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
016	0000	018 B	31901		2553	14531
016	0010	0160	31898		2554	14524
016	0020	0161	31908		2555	14526
016	0030	0158	31914		2555	14527
016	0049	0149	31978		2561	14527
016	0074	0141	32058		2568	14528
016	0098	0141	32077		2570	14532

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0180 B	31901		2553	14531	0000	00000	2463
0010	0160	31898		2554	14524	0025	00001	2452
0020	0161	31908		2555	14526	0049	00005	2445
0030	0158	31914		2555	14527	0074	00011	2439
0050	0149	31982		2562	14527	0122	00031	2381
0075	0141	3205 B		2568	14529	0182	00069	2324
0100	0141	32078		2570	14533	0240	00121	2303

C-REF-NO 006	YR 1963	DEPTH 85	WAVES 1 XX	AIR T	VIS
CONS. NO 082	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 51-090N	DAY 27	NO.DPTH 6	WND-DIR 220	WW-CODE 86	
LON 57-205W	HR 02.6	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1004.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
028	0000	038 B	31485		2504	14613
028	0009	0378	31471		2503	14613
028	0019	0380	31471		2503	14616
028	0028	0368	31496		2506	14612
028	0047	0259	31748		2535	14572
028	0070	0117	32126		2575	14518

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0380 B	31485		2504	14613	0000	00000	2932
0010	0378	31470		2503	14614	0030	00002	2942
0020	0380	31472		2503	14616	0059	00006	2942
0030	0359	31515		2508	14609	0088	00014	2892
0050	0260 F	3176 H		2535	14573	0144	00036	2630

C-REF-NO 006	YR 1963	DEPTH 36	WAVES 1 XX	AIR T	VIS
CONS. NO 083	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-070N	DAY 27	NO.DPTH 3	WND-DIR 240	WW-CODE 75	
LON 57-140W	HR 03.5	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1004.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
037	0000	037 C	31503		2506	14609
037	0010	0332	31511		2510	14594
037	0020	0332	31515		2510	14596

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0370 C	31503		2506	14609	0000	00000	2909
0010	0332	31511		2510	14594	0029	00001	2871
0020	0332	31515		2510	14596	0058	00006	2868

C-REF-NO 006	YR 1963	DEPTH 60	WAVES 1 XX	AIR T	VIS
CONS. NO 084	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-040N	DAY 27	NO.DPTH 5	WND-DIR 240	WW-CODE 75	
LON 57-098W	HR 04.5	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1002.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
046	0000	035 B	31519		2509	14600
046	0010	0358	31501		2507	14605
046	0020	0349	31534		2510	14603
046	0030	0341	31545		2512	14602
046	0039	0331	31561		2514	14599

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0350 B	31519		2509	14600	0000	00000	2880
0010	0358	31501		2507	14605	0029	00001	2901
0020	0349	31534		2510	14603	0058	00006	2868
0030	0341	31545		2512	14602	0087	00013	2854

C-REF-NO 006	YR 1963	DEPTH 64	WAVES 1 XX	AIR T	VIS
CONS. NO 085	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-022N	DAY 27	NO.DPTH 5	WND-DIR 240	WW-CODE 75	
LON 57-072W	HR 05.1	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1001.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
053	0000	039 C	31511		2505	14617
053	0010	0392	31453		2500	14619
053	0020		31435			
053	0030	0393	31441		2499	14623
053	0039	0392	31441		2499	14624

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0390 C	31511		2505	14617	0000	00000	2921
0010	0392	31453		2500	14619	0030	00002	2967
0020	0393	31435		2498	14621	0060	00006	2982
0030	0393	31441		2499	14623	0089	00014	2978

C-REF-NO 006	YR 1963	DEPTH 62	WAVES 1 XX	AIR T 02.3	VIS
CONS. NO 086	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-029N	DAY 27	NO.DPTH 5	WND-DIR 240	WW-CODE	
LON 57-326W	HR 07.2	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 999.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
074	0000	018 B	31957		2557	14532
074	0010	0137	31941		2559	14514
074	0020	0137	31941		2559	14516
074	0030	0132 B	31946		2560	14515
074	0049	0112	32188		2580	14513

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0180 B	31957		2557	14532	0000	00000	2420
0010	0137	31941		2559	14514	0024	00001	2405
0020	0137	31941		2559	14516	0048	00005	2405
0030	0132 B	31946		2560	14515	0073	00011	2398
0050	0111	32205		2582	14513	0119	00030	2188

C-REF-NO 006	YR 1963	DEPTH 58	WAVES 1 XX	AIR T 02.3	VIS
CONS. NO 087	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 51-123N	DAY 27	NO.DPTH 5	WND-DIR 240	WW-CODE 01	
LON 58-070W	HR 10.8	W-COLOR	WND-SPD 10	CLD-TPE 3	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 997.0	CLD-AMT 2	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
110	0000	020 B	31475		2518	14534
110	0010	0202	31469		2517	14537
110	0020	0204	31511		2520	14540
110	0030	0165 B	31655		2534	14526
110	0039	0167	31802		2546	14531

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0200 B	31475		2518	14534	0000	00000	2800
0010	0202	31469		2517	14537	0028	00001	2805
0020	0204	31511		2520	14540	0056	00006	2775
0030	0165 B	31655		2534	14526	0083	00013	2640

C-REF-NO 006	YR 1963	DEPTH 219	WAVES 1 XX	AIR T 02.1	VIS
CONS. NO 088	MONTH 11	MXSAMPD 02	WAVES 2 XX	WET B 01.4	STN
LAT 51-052N	DAY 27	NO.DPTH 10	WND-DIR 230	WW-CODE 02	
LON 57-565W	HR 12.2	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 997.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
126	0000	012 C	31828		2551	14504
126	0010	0108	31794		2549	14499
126	0020	0104	31796		2549	14499
126	0030	0105	31849		2554	14502
126	0050	0114	32044		2569	14512
126	0075	0108	32174		2579	14515
126	0100	0088	32249		2587	14511
129	0124	0011	32443		2606	14483
129	0149	-0031	32553		2617	14469
129	0174	-0040	32580		2619	14470

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0120 C	31828		2551	14504	0000	00000	2482
0010	0108	31794		2549	14499	0025	00001	2501
0020	0104	31796		2549	14499	0050	00005	2497
0030	0105	31849		2554	14502	0075	00012	2457
0050	0114	32044		2569	14512	0123	00031	2313
0075	0108	32174		2579	14515	0180	00067	2210
0100	0088	32249		2587	14511	0235	00116	2141
0125	0009	32449		2607	14482	0286	00176	1947
0150	-0033	32558		2617	14468	0334	00243	1844
0175	-0040	32579		2619	14470	0380	00320	1824

C-REF-NO 006	YR 1963	DEPTH 82	WAVES 1 XX	AIR T		VIS
CONS. NO 089	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET 8		STN
LAT 50-560N	DAY 27	NO.DPTH 6	WND-DIR 220	WW-CODE	02	
LON 57-445W	HR 14.3	W-COLOR	WND-SPD 07	CLD-TPE	6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 995.0	CLD-AMT	8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
146	0000	023 B	31722		2535	14551
146	0010	0226	31697		2533	14551
146	0019	0211	31723		2537	14546
146	0028	0136	31831		2550	14515
146	0047	0117	31877		2555	14511
146	0056	0115	31884		2556	14511

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0230 B	31722		2535	14551	0000	00000	2633
0010	0226	31697		2533	14551	0027	00001	2649
0020	0203	31734		2538	14543	0053	00005	2605
0030	0129 B	31843		2552	14513	0079	00012	2475
0050	0104 D	3190 C		2557	14505	0128	00032	2420

C-REF-NO 006	YR 1963	DEPTH 64	WAVES 1 XX	AIR T	VIS
CONS. NO 090	MONTH 11	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 50-482N	DAY 27	NO.DPTH 5	WND-DIR 220	WW-CODE 02	
LON 57-335W	HR 15.4	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 995.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
156	0000	042 B	31404		2493	14629
156	0010	0410	31404		2494	14626
156	0019	0410	31395		2494	14627
156	0029	0412	31397		2494	14630
156	0048	0407	31400		2494	14631

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0420 B	31404		2493	14629	0000	00000	3029
0010	0410	31404		2494	14626	0030	00002	3020
0020	0410	31395		2494	14628	0061	00006	3028
0030	0411	31394		2494	14630	0091	00014	3030

C-REF-NO 006	YR 1963	DEPTH 201	WAVES 1 XX	AIR T		VIS
CONS. NO 091	MONTH 11	MXSAMPD 01	WAVES 2 XX	WET B		STN
LAT 50-425N	DAY 27	NO.DPTH 8	WND-DIR 190	WW-CODE	02	
LON 57-255W	HR 17.2	W-COLOR	WND-SPD 13	CLD-TPE	6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 988.0	CLD-AMT	8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
174	0000	047 B	31189		2471	14647
174	0011	0486	31344		2482	14657
174	0019	0484	31345		2482	14658
174	0027	0488	31358		2483	14661
174	0043	0488	31351		2482	14664
174	0064	0488	31367		2484	14667
174	0084	0402	31497		2503	14636
174	0125	0059	32592		2616	14507

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0470 B	31189		2471	14647	0000	00000	3239
0010	0482	3131 E		2480	14655	0032	00002	3157
0020	0484	31347		2482	14658	0064	00006	3136
0030	0488	31358		2483	14662	0095	00015	3132
0050	0493 B	31348		2482	14667	0158	00040	3146
0075	0449	3142 B		2491	14653	0236	00090	3053
0100	0305 B	3185 G		2539	14602	0307	00153	2600
0125	0059	32592		2616	14507	0364	00217	1864

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CANADA

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DATA RECORD

GULF OF ST. LAWRENCE (Strait of Belle Isle)

July 27 to September 27, 1963

No. 6

(1965) Data Record Series

(Canadian) Oceanographic Data Centre

Programmed by the
Canadian Committee on Oceanography

1965

ROGER DUHAMEL, F. R. S. C.
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GULF OF ST. LAWRENCE

(Strait of Belle Isle)

July 27 to September 27, 1963

CODC Reference: 10-63-004

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615 Booth St., Ottawa, Canada

Programmed by the Canadian Committee on Oceanography

FISHERIES RESEARCH BOARD OF CANADA
and
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

GULF OF ST. LAWRENCE (STRAIT OF BELLE ISLE)

Ship: M/V "THETA"

Local cruise designation: Theta-2-63

Cruise period: July 27 - September 27, 1963

Observers: D. Dobson

C. J. Langford

F. D. Ewing

B. L. Blackford

G. Clark

ATLANTIC OCEANOGRAPHIC GROUP
and
MARINE SCIENCES BRANCH

Bedford Institute of Oceanography, Dartmouth, N. S.

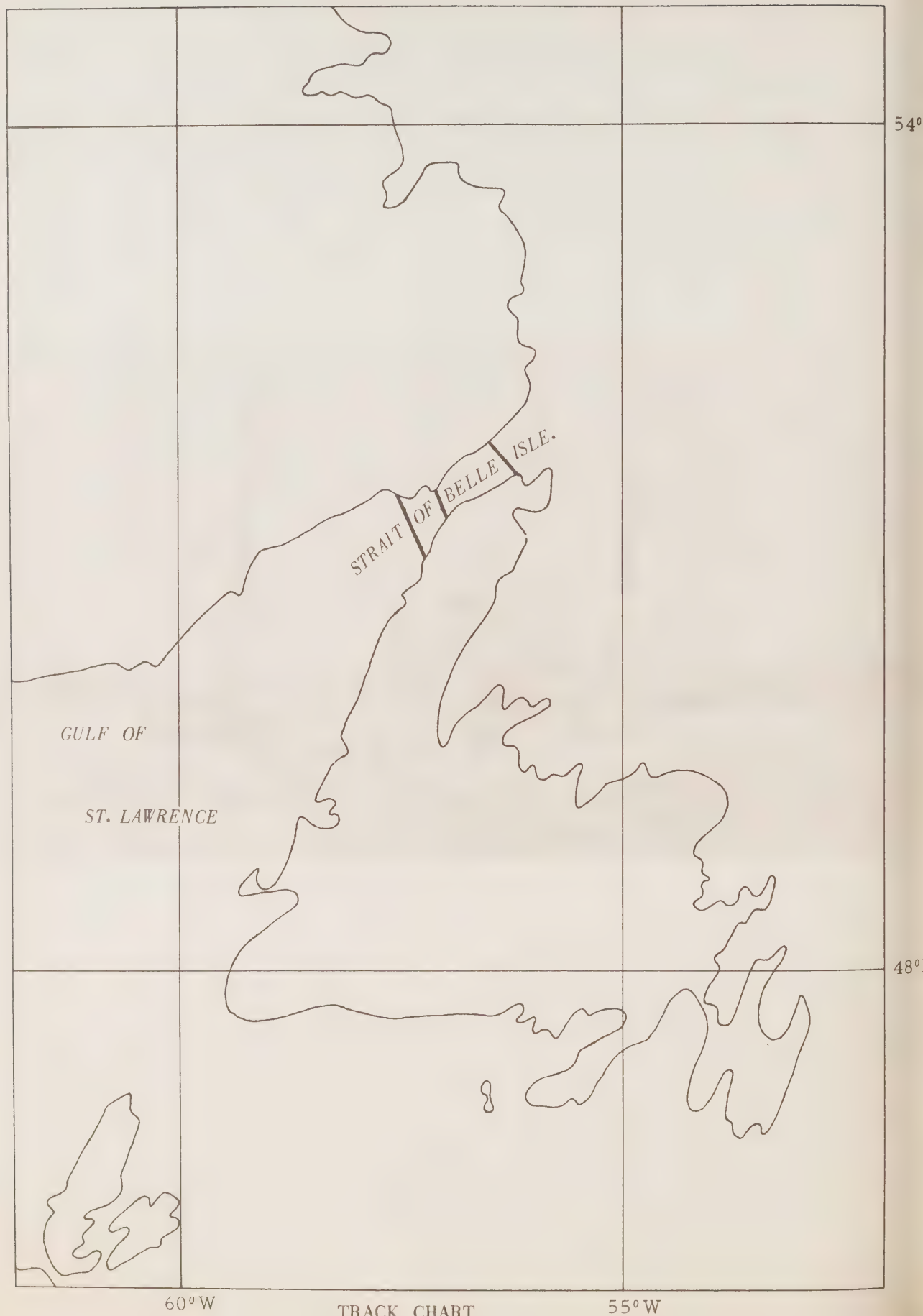
SECTION I

Description of data collection procedures

THETA



Christensen Canadian Enterprises Ltd.



INTRODUCTION

The purpose of this cruise was to determine the current pattern in the Strait of Belle Isle. The flow through the Strait had never been surveyed in detail and the data obtained during the investigation by Bell Dawson in 1912 did not yield positive conclusions.

In addition to the use of moored current meters it was proposed to measure the instantaneous net flow through the Strait by recording the difference of electrical potential across the Strait, created by the flow. A network of oceanographic stations, consisting of temperature and salinity observations were to be taken during two periods in order to interrelate the field of mass and field of flow.

EXTRACT OF CRUISE LOG

Depart Halifax, N. S.	-	July 27, 1963.
Return Halifax, N. S.	-	September 27, 1963.

The ship called twice at St. Anthony, Newfoundland, once for water, and once to admit one man in hospital.

OBSERVATION PROCEDURES

Originally it was intended to carry out current observations across three section lines, a central line across the narrows with the others scheduled about ten miles on either side. Owing, however, to the presence of a large number of foreign trawlers in the area, whose operations constantly menaced the safety of the moored meters, it was decided to concentrate on acquiring sufficient data on the line across the narrows.

In the immediate vicinity of this line, two cables were laid, one extending halfway across the Strait and the other from Flowers Cove, Newfoundland to Forteau Bay, Labrador. Electrodes were attached to the end of each of these cables. Inshore electrodes were placed in Forteau Bay. The recorders were installed at Forteau Bay. The voltage induced across the electrodes spanning the Strait gives a measure of the total flow while the other electrodes give a measure of flow through half the section. The longer cable remained in service throughout the cruise, whereas the shorter one failed after a few hours.

Stations occupied on this cruise were on three parallel lines across the Strait of Belle Isle, centre line from Savage Point to Amour Point, other lines being 30 miles east and west respectively. Each line consisted of 10 stations with near bottom samples in addition to standard depth observations of temperature and salinity. Current recorders were moored on the centre line at depths of 13 and 50 metres. Temperature recorders were also moored at some of these sites. Salinity samples were taken adjacent to these sites. The reversing water bottles used were of the Knudsen type, mounted with Richter and Wiese, Negretti, and Zambra, or Yoshino thermometers. Surface water samples were obtained with a plastic bucket. The temperature was measured with a thermometer graduated in 0.1°C intervals.

The network was occupied twice. On the first run all three lines were covered twice with four runs across the centre line. Four runs non-stop were covered on tidal cycle. The dates were August 6-9.

A repeat of the network was broken by poor weather conditions and each line was occupied on September 10, 11, and 12 while the four consecutive crossings of the centre line were made on September 18.

Stations with bathythermographs totalled 176 and approximately 1200 salinity samples were obtained. Weather observations were made at each station by the ship's officers and scientific personnel.

EMF cables laid from Flowers Cove to Forteau Bay and from halfway across the Strait into Forteau Bay were in place during this time and temperature-salinity samples were obtained over the electrode sites on four separate occasions.

LABORATORY PROCEDURES

The salinity samples were analysed on an NIO conductivity bridge at the Bedford Institute of Oceanography. Temperatures and depths were corrected and checked for possible errors. The current data are still being analysed and will be published in another report.

BATHYTHERMOGRAPH DATA

A total of 176 bathythermograph observations was taken and processed at BT data centre of the Bedford Institute of Oceanography, Dartmouth, N.S. One BT observation was made at each oceanographic station.

Section IV depicts the hand-drawn BT traces on standard pre-printed graphs resembling BT calibration grids of 2 depths ranges, 60 and 125 metres. The numbers appearing on these grids correspond to the consecutive number of the oceanographic stations occupied concurrently.

PERSONNEL

At Sea:

D. Dobson	Officer-in-Charge
C.J. Langford	
J.W. Pritchard	
F.D. Ewing	
R. Cassivi	
P. Berghuis	
E. Lewis	
D. MacQuarrie	
B.L. Blackford	
G. Clark	

Data Analyses:

Compilation of Data	R.W. Trites
	D. Dobson
	B.L. Blackford
	J.R. Chevrier
	F.D. Ewing
	R. Cassivi
	T.A. Holler
	P. Berghuis
	C.J. Langford
Salinity determinations	M.E. MacLean
	W. Young
B.T. processing	T.A. Grant
	D.M. MacDonald
B.T. drawing	T.A. Grant
	J.R. Chevrier

SECTION II

Description of the machine-generated data record

INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an **"estimate of precision"** for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under **"GENERAL INFORMATION"** in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record **"A"** is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an **"interpolation error estimate"** derived from the particular interpolation formula used. There are two purposes in stating the error estimates; first, to give an indication of the quality of the interpolated data; second, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the **"measurement error estimate"** comprises the **"combined measurement and interpolation error estimate"**. It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

[illegible]

OBSERVED		C		A		R		D																									
DATE	TIME	7	8	9	10	11	12	13	14																								
DATE	TIME	DEPT. OF SAMPLE	TEMPERATURE	SALINITY	OXYGEN	15	16	17	18																								
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46												
47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

σ_i = Standard deviation of the combined error estimates at standard oceanographic depth,
 ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $1/3 (V_{i_1} - V_{i_2})$
 γ = Interpolation polynomial coefficient.

Z_j = Observed depth.

Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma_i}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the **combined measurement and interpolation error estimate**. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the **interpolation error estimate** is given only when $\frac{\sigma_i}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

(1) CRUISE REFERENCE NUMBER:

Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC

(2) CONSECUTIVE NUMBER:

Indicates the chronological order in which the stations were occupied.

(3) LATITUDE:

Indicate the position of the platform at the time of observation

(4) LONGITUDE:

(5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).

(6) YEAR:

(7) MONTH:

(8) DAY:

(9) HOUR:

The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).

If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.

(10) COUNTRY/INSTITUTE:

The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.

(11) DEPTH:

The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".

(12) MAXIMUM

SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).

00 m - 50 m = 00

51 m - 150 m = 01

151 m - 250 m = 02

etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the **predominant non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE
(WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED
(WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_3
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01° C. Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 C1\%$, reported in:
 a. 1/100 parts per 1000, or
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

(8) PO ₄	Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
(9) -P-	Total Phosphorus reported to hundredths of microgram-atoms per litre.
(10) NO ₂	Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre – No dissolved nitrogen included –
(11) NO ₃	Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
(12) SiO ₂	Silicate-Silicon reported to tenths of microgram-atoms per litre.
(13) pH	The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D.	(8) POT-EN	(9) SVA.			

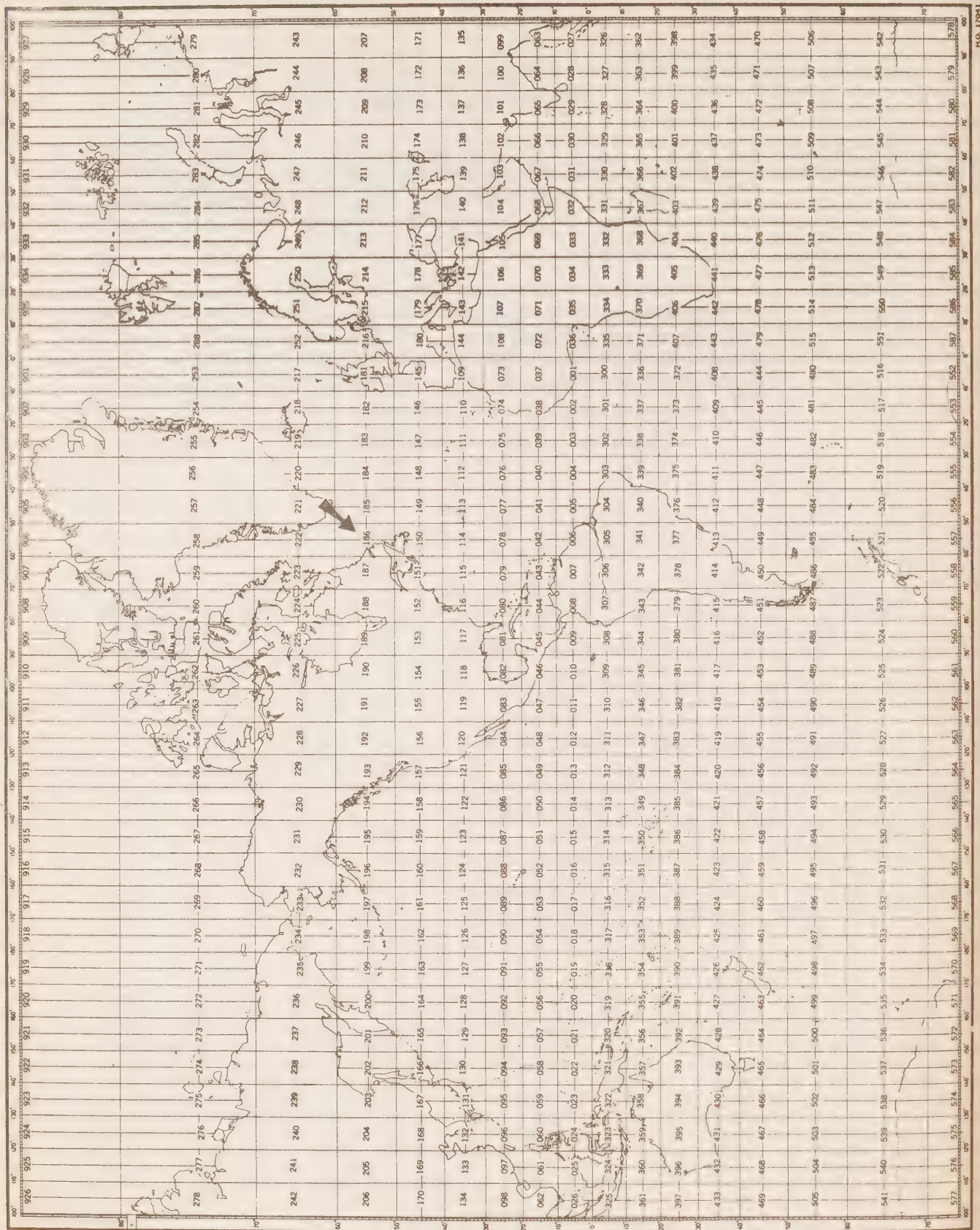
- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY: **A.** The reported salinity values are measured to three decimal places.
 (i) the interpolation error estimate is less than twice the standard deviation of measurement
 —the interpolated value is reported to three decimal places (e.g., 30.139).
 (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 —the interpolated value is reported to two decimal places, and followed by the **interpolation error estimate** (e.g., 29.23 C).
B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 —the interpolated value is reported to two decimal places, and followed by the **combined measurement and interpolation error estimate** (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "Introduction" to section II of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^P \delta dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = 1/g \int_0^P p \delta dp = \int_0^Z \rho p \delta dz$$
- χ is expressed in units of 10^8 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

- ‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

- * (Asterisk): this character may occur in the **interpolated** portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one **observed depth interval**. The **third**, and all consequent levels within that interval are preceded by the asterisk to indicate that more than **two** machine interpolations were carried out, utilizing the same set of interpolation parabolas.



MARS DEN SQUARE CHART

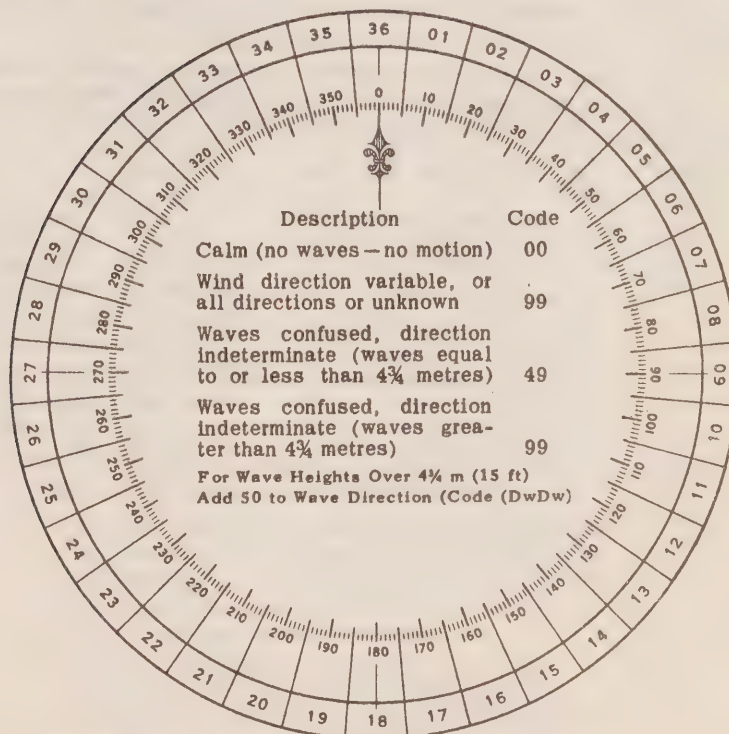
Table 1
CONVERSION
MINUTES TO $\frac{1}{10}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (Pw)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (Hw)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)		0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)	Add	3 6½ m (21 ft)
4	2 m (6½ ft)	50	4 7 m (22½ ft)
5	2½ m (8 ft)	to	5 7½ m (24 ft)
6	3 m (9½ ft)	Dw Dw	6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww			
except photometers	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
	03	Clouds generally forming or developing	
Haze, dust, sand or smoke	04	Visibility reduced by smoke, e.g. yeldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	More of less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	at or within sight of the station during the preceding hour or at the time of observation
19	Funnel clouds		
ww = 20 - 29			
Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation			
	20	Drizzle (not freezing) or snow grains	not falling as shower(s)
	21	Rain (not freezing)	
	22	Snow	
	23	Rain and snow or ice pellets, type (a)	
	24	Freezing drizzle or freezing rain	
	25	Shower (s) of rain	
	26	Shower (s) of snow, or of rain and snow	
	27	Shower (s) of hail, or of rain and hail	
	28	Fog or Ice fog	
	29	Thunderstorm (with or without precipitation)	
ww = 30 - 39			
Duststorm, sandstorm, drifting or blowing snow			
	30		- has decreased during the preceding hour
	31	Slight or moderate duststorm or sandstorm	- no appreciable change during the preceding hour
	32		- has begun or has increased during the preceding hour
	33		- has decreased during the preceding hour
	34	Severe duststorm or sandstorm	- no appreciable change during the preceding hour
	35		- has begun or has increased during the preceding hour
	36	Slight or moderate blowing snow	generally low (below eye level)
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	generally high (above eye level)
	39	Heavy blowing snow	
ww = 40 - 49			
Fog or Ice fog at the time of observation			
	40	Fog or Ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	41	Fog or Ice fog in patches	
	42	Fog or Ice fog, sky visible	has become thinner during the preceding hour
	43	Fog or Ice fog, sky invisible	
	44	Fog or Ice fog, sky visible	no appreciable change during the preceding hour
	45	Fog or Ice fog, sky invisible	
	46	Fog or Ice fog, sky visible	has begun or has become thicker during the preceding hour
	47	Fog or Ice fog, sky invisible	
	48	Fog, depositing rime, sky visible	
	49	Fog, depositing rime, sky invisible	

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

- | | | |
|----|--|--|
| 50 | Drizzle, not freezing, intermittent | } slight at time of observation |
| 51 | Drizzle, not freezing, continuous | |
| 52 | Drizzle, not freezing, intermittent | } moderate at time of observation |
| 53 | Drizzle, not freezing, continuous | |
| 54 | Drizzle, not freezing, intermittent | } heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous | |
| 56 | Drizzle, freezing, slight | |
| 57 | Drizzle, freezing, moderate or heavy (dense) | |
| 58 | Drizzle and rain, slight | |
| 59 | Drizzle and rain, moderate or heavy | |

ww = 60 - 69 Rain

- | | | |
|----|---|-----------------------------------|
| 60 | Rain, not freezing, intermittent | } slight at time of observation |
| 61 | Rain, not freezing, continuous | |
| 62 | Rain, not freezing, intermittent | } moderate at time of observation |
| 63 | Rain, not freezing, continuous | |
| 64 | Rain, not freezing, intermittent | } heavy at time of observation |
| 65 | Rain, not freezing, continuous | |
| 66 | Rain, freezing, slight | |
| 67 | Rain, freezing, moderate or heavy | |
| 68 | Rain or drizzle and snow, slight | |
| 69 | Rain or drizzle and snow, moderate or heavy | |

70 - 79 Solid precipitation not in showers

- | | | |
|----|---|-----------------------------------|
| ww | | |
| 70 | Intermittent fall of snow flakes | } slight at time of observation |
| 71 | Continuous fall of snow flakes | |
| 72 | Intermittent fall of snow flakes | } moderate at time of observation |
| 73 | Continuous fall of snow flakes | |
| 74 | Intermittent fall of snow flakes | } heavy at time of observation |
| 75 | Continuous fall of snow flakes | |
| 76 | Ice prisms (with or without fog) | |
| 77 | Snow grains (with or without fog) | |
| 78 | Isolated starlike snow crystals (with or without fog) | |
| 79 | Ice pellets, type (a) | |

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- | | | |
|----|--|---|
| 80 | Rain shower(s), slight | |
| 81 | Rain shower(s), moderate or heavy | |
| 82 | Rain shower(s), violent | |
| 83 | Shower(s) of rain and snow mixed, slight | |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy | |
| 85 | Snow shower(s), slight | |
| 86 | Snow shower(s), moderate or heavy | |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed | } - slight |
| 88 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | } - moderate or heavy |
| 90 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | |
| 91 | Slight rain at time of observation | } - slight |
| 92 | Moderate or heavy rain at time of observation | |
| 93 | Slight snow, or rain and snow mixed or hail at time of observation | } thunderstorm during the preceding hour but not at time of observation |
| 94 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation | |
| 95 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | } - slight |
| 96 | Thunderstorm, slight or moderate, with hail at time of observation | |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation | } thunderstorm at time of observation |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation | |
| 99 | Thunderstorm, heavy, with hail at time of observation | |

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, dust storm, sand storm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{3}{4}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11CCO Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N.B.
04. Arctic Biological Station, St. Anne de Bellevue, P. Q.
05. Biological Station, St. John's, Nfld.
06. Station de Biologie Marine, Grande Riviere, P. Q.
07. Canadian Hydrographic Service.
08. Naval Research Establishment, Dartmouth, N.S.
09. Pacific Naval Laboratory, Esquimalt, B. C.
10. Bedford Institute of Oceanography.
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Inland Region, Oceanographic Research, Ottawa.
14. Institute of Oceanography, Dalhousie University.

SECTION III

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Bedford Institute of Oceanography
<u>Observation platform:</u>	M/V "Theta"
<u>Vessel's cruising speed:</u>	10 knots
<u>Total number stations occupied:</u>	176
<u>Anemometer height above sea level:</u>	9 metres
<u>Barometer readings</u>	Aneroid Barometer (corrected)
<u>Air temperature</u>	Sling Psychrometer
<u>Wet bulb temperature</u>	Sling Psychrometer
<u>Surface sea water temperature</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.01
Salinity	0.003

C-REF-NO 004	YR 1963	DEPTH	54	WAVES 1 0620	AIR T 10.0	VIS 6
CONS. NO 001	MONTH 8	MXSAMPD	00	WAVES 2 0633	WET B 09.2	STN
LAT 51-278N	DAY 06	NO.DPTH	5	WND-DIR 060	WW-CODE 20	
LON 56-502W	HR 18.3	W-COLOR	20	WND-SPD 03	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1007.7	CLD-AMT 7	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
184	0000	090 B	30689		2377	14811
184	0010	1058	30838		2363	14874
184	0020	1012 B	30740		2364	14857
184	0030	0813	30526		2377	14781
184	0050	0706	30592		2397	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0900 B	30689		2377	14811	0000	00000	4137
0010	1058	30838		2363	14874	0042	00002	4269
0020	1012 B	30740		2364	14857	0085	00009	4271
0030	0813	30526		2377	14781	0127	00020	4141
0050	0706	30592		2397	14743	0209	00053	3955

C-REF-NO 004	YR 1963	DEPTH 94	WAVES 1 06X0	AIR T 10.0	VIS 6
CONS. NO 002	MONTH 8	MXSAMPD 01	WAVES 2 06X3	WET B 09.2	STN
LAT 51-275N	DAY 06	NO.DPTH 8	WND-DIR 060	WW-CODE 20	
LON 56-498W	HR 18.9	W-COLOR 20	WND-SPD 03	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 7	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	115 B	30360		2311	14899
191	0010	1032 C	30849		2369	14864
191	0013	0999	30815		2371	14852
191	0020	0808	30550		2380	14778
191	0030	0705	30516		2391	14739
191	0050	0475	30903		2448	14653
191	0075	0296	31516		2514	14589
191	0089	0281	31537		2516	14585

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1150 B	30360		2311	14899	0000	00000	4773
0010	1032 C	30849		2369	14864	0045	00002	4220
0020	0808	30550		2380	14778	0087	00009	4115
0030	0705	30516		2391	14739	0128	00019	4008
0050	0475	30903		2448	14653	0203	00049	3462
0075	0296	31516		2514	14589	0282	00099	2840

C-REF-NO 004	YR 1963	DEPTH 80	WAVES 1 06X0	AIR T 10.1	VIS 6
CONS. NO 003	MONTH 8	MXSAMPD 01	WAVES 2 06X3	WET B 09.3	STN
LAT 51-271N	DAY 06	NO.DPTH 7	WND-DIR 060	WW-CODE 01	
LON 56-492W	HR 19.4	W-COLOR 20	WND-SPD 03	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 7	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
195	0000	064 B	30178		2373	14703
195	0010	0643	30191		2373	14706
195	0013	0644	30187		2373	14707
195	0020	0621	30361		2389	14701
195	0030	0609	30416		2395	14699
195	0050	0578	30532		2408	14691
195	0075	0346	31392		2499	14609

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0640 B	30178		2373	14703	0000	00000	4181
0010	0643	30191		2373	14706	0042	00002	4175
0020	0621	30361		2389	14701	0083	00008	4023
0030	0609	30416		2395	14699	0123	00019	3969
0050	0578	30532		2408	14691	0202	00051	3849
0075	0346	31392		2499	14609	0288	00104	2975

C-REF-NO 004	YR 1963	DEPTH	58	WAVES 1 06X0	AIR T 10.2	VIS 6
CONS. NO 004	MONTH 8	MXSAMPD	00	WAVES 2 06X3	WET B 09.3	STN
LAT 51-266N	DAY 06	NO.DPTH	5	WND-DIR 060	WW-CODE 01	
LON 56-486W	HR 19.7	W-COLOR	20	WND-SPD 03	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1007.4	CLD-AMT 7	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	084 B	30514		2372	14786
198	0010	0772	30474		2379	14761
198	0020	0613	30534		2404	14700
198	0030	0655	30725		2414	14721
198	0050	0266	31803		2539	14576

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0840 B	30514		2372	14786	0000	00000	4183
0010	0772	30474		2379	14761	0042	00002	4123
0020	0613	30534		2404	14700	0082	00008	3884
0030	0655	30725		2414	14721	0120	00018	3791
0050	0266	31803		2539	14576	0185	00043	2599

C-REF-NO 004	YR 1963	DEPTH 66	WAVES 1 06X0	AIR T 10.2	VIS 6
CONS. NO 005	MONTH 8	MXSAMPD 01	WAVES 2 06X3	WET B 09.4	STN
LAT 51-252N	DAY 06	NO.DPTH 6	WND-DIR 060	WW-CODE 02	
LON 56-469W	HR 20.0	W-COLOR 20	WND-SPD 04	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 8	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
203	0000	091 B	31008		2401	14819
203	0010	0914	31003		2400	14822
203	0020	0628	31005		2439	14713
203	0030	0356	31345		2495	14606
203	0050	0231	31946		2553	14563
203	0061	0218	31994		2558	14559

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0910 B	31008		2401	14819	0000	00000	3914
0010	0914	31003		2400	14822	0039	00002	3925
0020	0628	31005		2439	14713	0077	00008	3549
0030	0356	31345		2495	14606	0110	00016	3018
0050	0231	31946		2553	14563	0165	00038	2464

C-REF-NO 004	YR 1963	DEPTH 78	WAVES 1 06X0	AIR T 10.2	VIS 6
CONS. NO 006	MONTH 8	MXSAMPD 01	WAVES 2 06X3	WET B 09.3	STN
LAT 51-239N	DAY 06	NO.DPTH 6	WND-DIR 060	WW-CODE 02	
LON 56-453W	HR 20.6	W-COLOR 20	WND-SPD 04	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 7	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
208	0000	111 B	31215		2384	14895
208	0010	1058 C	31216		2393	14878
208	0020	0660 D	31132		2445	14727
208	0030	0474 D	31354		2484	14656
208	0050	0316	31780		2533	14598
208	0075	0162	32044		2566	14538

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1110 B	31215		2384	14895	0000	00000	4074
0010	1058 C	31216		2393	14878	0040	00002	3990
0020	0660 D	31132		2445	14727	0078	00008	3491
0030	0474 D	31354		2484	14656	0111	00016	3121
0050	0316	31780		2533	14597	0169	00039	2656
0075	0162	32044		2566	14538	0232	00079	2342

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 06X0	AIR T 10.2	VIS 7
CONS. NO 007	MONTH 8	MXSAMPD 01	WAVES 2 06X3	WET B 09.2	STN
LAT 51-226N	DAY 06	NO.DPTH 7	WND-DIR 060	WW-CODE 02	
LON 56-436W	HR 21.2	W-COLOR 20	WND-SPD 05	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.1	CLD-AMT 7	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
212	0000	103 B	31292		2403	14867
212	0010	1036	31315		2404	14872
212	0020	0852	31449		2444	14806
212	0030	0647	31577		2482	14729
212	0050	0273	32019		2555	14582
212	0075	0234	32043		2560	14569
212	0095	0227	32084		2564	14570

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1030 B	31292		2403	14867	0000	00000	3887
0010	1036	31315		2404	14872	0039	00002	3881
0020	0852	31449		2444	14806	0076	00008	3506
0030	0647	31577		2482	14729	0110	00016	3144
0050	0273	32019		2555	14582	0166	00038	2441
0075	0234	32043		2560	14569	0227	00077	2393

C-REF-NO 004	YR 1963	DEPTH	85	WAVES 1 06X0	AIR T 10.1	VIS 7
CONS. NO 008	MONTH 8	MXSAMPD	01	WAVES 2 07X3	WET B 09.3	STN
LAT 51-221N	DAY 06	NO.DPTH	8	WND-DIR 070	WW-CODE 02	
LON 56-431W	HR 21.6	W-COLOR	20	WND-SPD 05	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1008.1	CLD-AMT 7	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
217	0000	104 B	31304		2403	14871
217	0010	1004	31335		2411	14860
217	0013	0940	31379		2425	14837
217	0020	0718	31564		2472	14756
217	0030	0518	31769		2512	14679
217	0050	0320	31965		2547	14602
217	0075	0262	32025		2557	14581
217	0079	0249	32035		2559	14577

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	31304		2403	14871	0000	00000	3894
0010	1004	31335		2411	14860	0039	00002	3815
0020	0718	31564		2472	14756	0074	00007	3240
0030	0518	31769		2512	14679	0105	00015	2854
0050	0320	31965		2547	14602	0159	00037	2519
0075	0262	32025		2557	14581	0221	00077	2428

C-REF-NO 004	YR 1963	DEPTH 64	WAVES 1 06X0	AIR T 10.2	VIS 7
CONS. NO 009	MONTH 8	MXSAMPD 01	WAVES 2 06X2	WET B 09.4	STN
LAT 51-216N	DAY 06	NO.DPTH 7	WND-DIR 080	WW-CODE 02	
LON 56-423W	HR 22.0	W-COLOR 20	WND-SPD 04	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.1	CLD-AMT 7	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
221	0000	104 B	31289		2402	14871
221	0010	1009	31318		2409	14862
221	0013	0909	31417		2433	14826
221	0020	0661	31659		2486	14734
221	0030	0522	31809		2515	14682
221	0050	0406	31911		2535	14638
221	0059	0346	31950		2544	14614

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	31289		2402	14871	0000	00000	3905
0010	1009	31318		2409	14862	0039	00002	3836
0020	0661	31659		2486	14734	0074	00007	3098
0030	0522	31809		2515	14682	0104	00015	2828
0050	0406	31911		2535	14638	0159	00037	2637

C-REF-NO 004	YR 1963	DEPTH 20	WAVES 1 06X0	AIR T 10.2	VIS 7
CONS. NO 010	MONTH 8	MXSAMPD 00	WAVES 2 06X1	WET B 09.3	STN
LAT 51-210N	DAY 06	NO.DPTH 3	WND-DIR 080	WW-CODE 02	
LON 56-416W	HR 22.3	W-COLOR 20	WND-SPD 03	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.1	CLD-AMT 7	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
225	0000	104 B	31280		2401	14871
225	0010	0936 B	31367		2424	14835
225	0015	0840	31495		2449	14801

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	31280		2401	14871	0000	00000	3911
0010	0936 B	31367		2424	14835	0038	00002	3688

C-REF-NO 004	YR 1963	DEPTH	25	WAVES 1 49XX	AIR T 08.7	VIS 8
CONS. NO 011	MONTH 8	MXSAMPD	00	WAVES 2 49XX	WET B 08.0	STN
LAT 51-361N	DAY 07	NO.DPTH	3	WND-DIR 330	WW-CODE 00	
LON 55-596W	HR 02.7	W-COLOR		WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1007.1	CLD-AMT 9	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
028	0000	090 B	31259		2422	14819
028	0010	0591	31723		2500	14705
028	0020	0140	32359		2592	14523

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0900 B	31259		2422	14819	0000	00000	3713
0010	0591	31723		2500	14705	0034	00002	2967
0020	0140	32359		2592	14523	0059	00005	2089

C-REF-NO 004	YR 1963	DEPTH	52	WAVES 1 49X0	AIR T 08.5	VIS	B
CONS. NO 012	MONTH 8	MXSAMPD	00	WAVES 2 49X0	WET B 07.8	STN	
LAT 51-366N	DAY 07	NO.DPTH	5	WND-DIR 340	WW-CODE 00		
LON 56-002W	HR 03.0	W-COLOR		WND-SPD 01	CLD-TPE X		
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1007.1	CLD-AMT 9	HW	01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
032	0000	077 B	30780		2403	14763
032	0010	0658 B	31298		2458	14727
032	0020	0168 B	32231		2580	14534
032	0030	0020	32440		2606	14471
032	0050	0000	32493		2611	14466

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0770 B	30780		2403	14763	0000	00000	3890
0010	0658 B	31298		2458	14727	0036	00002	3364
0020	0168 B	32231		2580	14534	0064	00006	2204
0030	0020	32440		2606	14471	0085	00011	1962
0050	0000	32493		2611	14466	0124	00027	1912

C-REF-NO 004	YR 1963	DEPTH 73	WAVES 1 49X0	AIR T 08.3	VIS 8
CONS. NO 013	MONTH 8	MXSAMPD 01	WAVES 2 49X0	WET B 07.4	STN
LAT 51-381N	DAY 07	NO.DPTH 6	WND-DIR 350	WW-CODE 00	
LON 56-020W	HR 03.4	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
036	0000	068 B	30170		2367	14719
036	0010	0402 C	30958		2460	14617
036	0020	0290	31542		2516	14578
036	0030	-0009	32246		2591	14455
036	0050	-0090	32543		2618	14425
036	0068	-0096	32571		2621	14426

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0680 B	30170		2367	14719	0000	00000	4234
0010	0402 C	30958		2460	14617	0038	00002	3350
0020	0290	31542		2516	14578	0069	00006	2814
0030	-0009	32246		2591	14455	0094	00012	2098
0050	-0090	32543		2618	14425	0133	00028	1839

C-REF-NO 004	YR 1963	DEPTH 78	WAVES 1 49X0	AIR T 08.2	VIS 8
CONS. NO 014	MONTH 8	MXSAMPD 01	WAVES 2 49X0	WET B 07.5	STN
LAT 51-383N	DAY 07	NO.DPTH 6	WND-DIR 350	WW-CODE 00	
LON 56-024W	HR 03.8	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
040	0000	067 B	30136		2366	14715
040	0010	0597	30336		2390	14690
040	0020	0202	31547		2523	14540
040	0030	-0010	32285		2594	14456
040	0050	-0112	32587		2622	14416
040	0073	-0115	32589		2623	14418

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0670 B	30136		2366	14715	0000	00000	4247
0010	0597	30336		2390	14690	0041	00002	4014
0020	0202	31547		2523	14540	0075	00007	2746
0030	-0010	32285		2594	14456	0100	00013	2068
0050	-0112	32587		2622	14416	0139	00029	1799
0075	-0097 F	3252 G		2617	14426	0185	00058	1851

C-REF-NO 004	YR 1963	DEPTH 92	WAVES 1 49X0	AIR T 08.5	VIS B
CONS. NO 015	MONTH 8	MXSAMPD 01	WAVES 2 49X0	WET B 07.8	STN
LAT 51-403N	DAY 07	NO.DPTH 7	WND-DIR 350	WW-CODE 00	
LON 56-048W	HR 04.2	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 9	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
044	0000	065 B	30221		2375	14708
044	0010	0622	30319		2386	14700
044	0020	0331	31117		2479	14590
044	0030	0046	31958		2565	14477
044	0050	-0112	32554		2620	14415
044	0075	-0125	32596		2624	14414
044	0087	-0123	32590		2623	14417

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0650 B	30221		2375	14708	0000	00000	4160
0010	0622	30319		2386	14700	0041	00002	4055
0020	0331	31117		2479	14590	0078	00007	3169
0030	0046	31958		2565	14477	0105	00014	2343
0050	-0112	32554		2620	14415	0147	00031	1824
0075	-0125	32596		2624	14414	0193	00060	1786

C-REF-NO 004 YR 1963 DEPTH 80 WAVES 1 49X0 AIR T 09.3 VIS B
 CONS. NO 016 MONTH 8 MXSAMPD 01 WAVES 2 49X0 WET B 08.3 STN
 LAT 51-423N DAY 07 NO.DPTH 6 WND-DIR 280 WW-CODE 00
 LON 56-073W HR 04.8 W-COLOR WND-SPD 01 CLD-TPE X
 MARSD SQ 186 C/I 1810 W-TRNSP BARO 1007.7 CLD-AMT 9 HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
050	0000	067 B	30119		2364	14715
050	0010	0639	30169		2372	14704
050	0020	0408	30736		2442	14618
050	0030	-0016	32106		2580	14450
050	0050	-0088	32457		2611	14425
050	0078	-0096	32491		2614	14426

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0670 B	30119		2364	14715	0000	00000	4260
0010	0639	30169		2372	14704	0042	00002	4187
0020	0408	30736		2442	14618	0081	00008	3523
0030	-0016	32106		2580	14450	0110	00015	2202
0050	-0088	32457		2611	14425	0151	00032	1906
0075	-0151 I	3266 I		2630	14402	0197	00061	1728

C-REF-NO 004	YR 1963	DEPTH	83	WAVES 1 49X0	AIR T 10.1	VIS 8
CONS. NO 017	MONTH 8	MXSAMPD	01	WAVES 2 49X0	WET B 09.0	STN
LAT 51-442N	DAY 07	NO.DPTH	6	WND-DIR 280	WW-CODE 00	
LON 56-098W	HR 05.2	W-COLOR		WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1008.1	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
054	0000	064 B	29723		2337	14697
054	0010	0519	29695		2348	14649
054	0020	0455	30031		2381	14628
054	0030	0428 C	30259		2402	14622
054	0050	0292	31161		2486	14579
054	0075	-0067	32391		2605	14438

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0640 B	29723		2337	14697	0000	00000	4522
0010	0519	29695		2348	14649	0045	00002	4413
0020	0455	30031		2381	14628	0088	00009	4098
0030	0428 C	30259		2402	14622	0128	00019	3902
0050	0292	31161		2486	14579	0198	00047	3105
0075	-0067	32391		2605	14438	0262	00086	1962

C-REF-NO 004 YR 1963 DEPTH 96 WAVES 1 49X0 AIR T 10.0 VIS 8
 CONS. NO 018 MONTH 8 MXSAMPD 01 WAVES 2 49X0 WET B 08.9 STN
 LAT 51-448N DAY 07 NO.DPTH 7 WND-DIR 270 WW-CODE 00
 LON 56-104W HR 05.7 W-COLOR WND-SPD 01 CLD-TPE X
 MARSD SQ 186 C/I 1810 W-TRNSP BARO 1008.1 CLD-AMT 9 HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
059	0000	060 B	29605		2332	14680
059	0010	0497	29859		2364	14642
059	0020	0450	30417		2412	14631
059	0030	0226	31223		2496	14547
059	0050	0040	31962		2566	14477
059	0075	-0050	32296		2597	14445
059	0095	-0059	32454		2610	14446

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0600 B	29605		2332	14680	0000	00000	4566
0010	0497	29859		2364	14642	0044	00002	4268
0020	0450	30417		2412	14631	0085	00008	3802
0030	0226	31223		2496	14547	0119	00017	3009
0050	0040	31962		2566	14477	0173	00038	2336
0075	-0050	32296		2597	14445	0228	00073	2041

C-REF-NO 004	YR 1963	DEPTH	44	WAVES 1 49X0	AIR T 10.0	VIS	B
CONS. NO 019	MONTH 8	MXSAMPD	00	WAVES 2 49X0	WET B 08.9	STN	
LAT 51-461N	DAY 07	NO.DPTH	5	WND-DIR 270	WW-CODE 00		
LON 56-121W	HR 06.3	W-COLOR		WND-SPD 01	CLD-TPE X		
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1008.1	CLD-AMT 9	HW	05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
064	0000	057 B	29430		2322	14665
064	0006	0567	29414		2321	14665
064	0016	0562	29552		2332	14666
064	0026	0472	30094		2385	14637
064	0038	0188	31371		2510	14534

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0570 B	29430		2322	14665	0000	00000	4665
0010	0570 D	2943 C		2322	14667	0047	00002	4664
0020	0539 B	29716		2348	14659	0092	00009	4419
0030	0389 E	3046 B		2421	14608	0133	00020	3716

C-REF-NO 004 YR 1963 DEPTH 36 WAVES 1 00X0 AIR T 10.9 VIS 8
 CONS. NO 020 MONTH 8 MXSAMPD 00 WAVES 2 00X0 WET B 09.5 STN
 LAT 51-467N DAY 07 NO.DPTH 4 WND-DIR CALM WW-CODE 00
 LON 56-129W HR 06.7 W-COLOR WND-SPD 00 CLD-TPE X
 MARSD SQ 186 C/I 1810 W-TRNSP BARO 1008.4 CLD-AMT 9 HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
068	0000	060 B	29543		2327	14679
068	0010	0569	29650		2339	14669
068	0020	0513	29953		2369	14652
068	0030	0386	30517		2426	14607

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0600 B	29543		2327	14679	0000	00000	4612
0010	0569	29650		2339	14669	0046	00002	4499
0020	0513	29953		2369	14652	0089	00009	4214
0030	0386	30517		2426	14607	0129	00019	3669

C-REF-NO 004	YR 1963	DEPTH 48	WAVES 1 49X0	AIR T 15.3	VIS 8
CONS. NO 021	MONTH 8	MXSAMPD 00	WAVES 2 49X0	WET B 13.5	STN
LAT 51-204N	DAY 07	NO.DPTH 5	WND-DIR 090	WW-CODE 02	
LON 57-405W	HR 15.2	W-COLOR 10	WND-SPD 01	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 2	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
153	0000	129 B	30615		2304	14951
153	0010	1168	31017		2358	14915
153	0020	1054	31181		2391	14878
153	0030	0924	31246		2417	14833
153	0043	0822	31352		2440	14797

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1290 B	30615		2304	14951	0000	00000	4831
0010	1168	31017		2358	14915	0046	00002	4320
0020	1054	31181		2391	14878	0088	00009	4011
0030	0924	31246		2417	14833	0127	00018	3763

C-REF-NO 004	YR 1963	DEPTH 106	WAVES 1 17X0	AIR T 14.8	VIS 7
CONS. NO 022	MONTH 8	MXSAMPD 01	WAVES 2 20X1	WET B 13.4	STN
LAT 51-196N	DAY 07	NO.DPTH 7	WND-DIR 170	WW-CODE 02	
LON 57-389W	HR 15.5	W-COLOR 20	WND-SPD 02	CLD-TPE 2	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 3	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
158	0000	130 B	31017		2334	14959
158	0010	1220	31146		2359	14935
158	0020	1172	31169		2369	14920
158	0030	0888	31363		2432	14821
158	0050	0699	31525		2471	14753
158	0075	0526	31688		2505	14689
158	0100	0197	32082		2566	14558

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SYA
0000	1300 B	31017		2334	14959	0000	00000	4553
0010	1220	31146		2359	14935	0045	00002	4316
0020	1172	31169		2369	14920	0087	00009	4217
0030	0888	31363		2432	14820	0127	00019	3623
0050	0699	31525		2471	14753	0196	00047	3249
0075	0526	31688		2505	14689	0273	00096	2927
0100	0197	32082		2566	14558	0340	00154	2337

C-REF-NO 004	YR 1963	DEPTH 126	WAVES 1 17X0	AIR T 14.8	VIS 8
CONS. NO 023	MONTH 8	MXSAMPD 01	WAVES 2 20X1	WET B 13.2	STN
LAT 51-183N	DAY 07	NO.DPTH 8	WND-DIR 170	WW-CODE 02	
LON 57-367W	HR 16.1	W-COLOR 20	WND-SPD 02	CLD-TPE 2	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 3	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
162	0000	130 B	31037		2335	14959
162	0010	1074	31035		2376	14882
162	0020	0834	30972		2409	14793
162	0030	0719	31008		2428	14751
162	0050	0611	31608		2489	14719
162	0075	0477	31746		2515	14669
162	0100	-0016	32484		2611	14467
162	0121	-0138	32766		2638	14418

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300 B	31037		2335	14959	0000	00000	4539
0010	1074	31035		2376	14882	0044	00002	4149
0020	0834	30972		2409	14793	0084	00008	3836
0030	0719	31008		2428	14751	0121	00018	3658
0050	0611	31608		2489	14719	0189	00045	3080
0075	0477	31746		2515	14669	0263	00092	2832
0100	-0016	32484		2611	14467	0323	00144	1910

C-REF-NO 004	YR 1963	DEPTH 104	WAVES 1 17X0	AIR T 13.4	VIS 7
CONS. NO 024	MONTH 8	MXSAMPD 00	WAVES 2 20X2	WET B 12.5	STN
LAT 51-157N	DAY 07	NO.DPTH 3	WND-DIR 170	WW-CODE 03	
LON 57-321W	HR 16.9	W-COLOR 20	WND-SPD 02	CLD-TPE 2	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.8	CLD-AMT 4	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
169	0000	091 B	30803		2385	14817
169	0010	0799	30920		2410	14777
169	0020	0698	31179		2444	14743

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0910 B	30803		2385	14817	0000	00000	4067
0010	0799	30920		2410	14777	0040	00002	3826
0020	0698	31179		2444	14743	0076	00008	3503

C-REF-NO 004	YR 1963	DEPTH 125	WAVES 1 17X0	AIR T 13.3	VIS 7
CONS. NO 025	MONTH 8	MXSAMPD 01	WAVES 2 20X2	WET B 12.4	STN
LAT 51-127N	DAY 07	NO.DPTH 8	WND-DIR 170	WW-CODE 03	
LON 57-267W	HR 17.6	W-COLOR 20	WND-SPD 02	CLD-TPE 1	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 6	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
177	0000	118 B	31022		2356	14918
177	0010	0979	31026		2391	14847
177	0020	0661	31139		2446	14728
177	0030	0514	31231		2470	14671
177	0050	0520	31669		2504	14682
177	0075	0222	32073		2564	14565
177	0100	-0066	32580		2620	14445
177	0120	-0140	32776		2639	14417

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1180 B	31022		2356	14918	0000	00000	4335
0010	0979	31026		2391	14847	0042	00002	4006
0020	0661	31139		2446	14728	0080	00008	3487
0030	0514	31231		2470	14671	0113	00016	3254
0050	0520	31669		2504	14682	0176	00041	2933
0075	0222	32073		2564	14565	0242	00083	2362
0100	-0066	32580		2620	14445	0295	00130	1816

C-REF-NO 004	YR 1963	DEPTH 96	WAVES 1 20X0	AIR T 14.2	VIS 7
CONS. NO 026	MONTH 8	MXSAMPD 01	WAVES 2 20X2	WET B 13.4	STN
LAT 51-117N	DAY 07	NO.DPTH 7	WND-DIR 200	WW-CODE 01	
LON 57-202W	HR 18.4	W-COLOR 30	WND-SPD 03	CLD-TPE 2	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 2	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
185	0000	146 B	31021		2302	15012
185	0010	1323	31022		2329	14969
185	0020	1158 B	31151		2370	14915
185	0030	0854	31434		2442	14809
185	0050	0362	31868		2536	14618
185	0075	-0014	32446		2608	14463
185	0091	-0087	32592		2622	14434

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1460 B	31021		2302	15012	0000	00000	4858
0010	1323	31022		2329	14969	0047	00002	4595
0020	1158 B	31151		2370	14915	0092	00009	4206
0030	0854	31434		2442	14808	0130	00019	3521
0050	0362	31868		2536	14618	0192	00043	2629
0075	-0014	32446		2608	14463	0250	00079	1941

C-REF-NO 004	YR 1963	DEPTH 50	WAVES 1 20X0	AIR T 15.0	VIS 4
CONS. NO 027	MONTH 8	MXSAMPD 00	WAVES 2 20X2	WET B 14.2	STN
LAT 51-060N	DAY 07	NO.DPTH 5	WND-DIR 200	WW-CODE 40	
LON 57-158W	HR 19.3	W-COLOR 30	WND-SPD 02	CLD-TPE 0	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0000	139 B	31000		2314	14989
194	0010	1326	30983		2326	14969
194	0020	1284	31005		2336	14957
194	0030	0893	31418		2435	14823
194	0045	0575	31719		2502	14705

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1390 B	31000		2314	14989	0000	00000	4736
0010	1326	30983		2326	14969	0047	00002	4629
0020	1284	31005		2336	14957	0093	00009	4537
0030	0893	31418		2435	14823	0134	00020	3589

C-REF-NO 004	YR 1963	DEPTH 66	WAVES 1 20X0	AIR T 14.7	VIS 4
CONS. NO 028	MONTH 8	MXSAMPD 01	WAVES 2 20X2	WET B 14.4	STN
LAT 51-036N	DAY 07	NO.DPTH 6	WND-DIR 200	WW-CODE 44	
LON 57-107W	HR 20.0	W-COLOR 30	WND-SPD 02	CLD-TPE 0	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 9	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
201	0000	136 B	30951		2317	14979
201	0010	1342	31017		2325	14975
201	0020	1007	31271		2406	14862
201	0030	0578 B	31710		2501	14703
201	0050	0118	32167		2578	14515
201	0061	0068	32246		2587	14496

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1360 B	30951		2317	14979	0000	00000	4714
0010	1342	31017		2325	14975	0047	00002	4634
0020	1007	31271		2406	14862	0090	00009	3869
0030	0578 B	31710		2501	14703	0124	00017	2964
0050	0118	32167		2578	14515	0176	00038	2222

C-REF-NO 004	YR 1963	DEPTH 69	WAVES 1 20X0	AIR T 15.3	VIS 3
CONS. NO 029	MONTH 8	MXSAMPD 01	WAVES 2 20X2	WET B 14.6	STN
LAT 51-026N	DAY 07	NO.DPTH 6	WND-DIR 200	WW-CODE 44	
LON 57-087W	HR 20.4	W-COLOR 30	WND-SPD 02	CLD-TPE 0	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.1	CLD-AMT 9	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
205	0000	131 B	31039		2333	14963
205	0010	1060	31044		2379	14877
205	0020	1093	31189		2385	14892
205	0030	0432	31822		2525	14644
205	0050	0088	32206		2583	14503
205	0065	0073	32246		2587	14499

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1310 B	31039		2333	14963	0000	00000	4556
0010	1060	31044		2379	14877	0044	00002	4120
0020	1093	31189		2385	14892	0085	00008	4069
0030	0432	31822		2525	14644	0119	00017	2727
0050	0088	32206		2583	14502	0168	00036	2175

C-REF-NO 004	YR 1963	DEPTH 61	WAVES 1 18X0	AIR T 15.9	VIS 3
CONS. NO 030	MONTH 8	MXSAMPD 01	WAVES 2 20X2	WET B 14.9	STN
LAT 51-017N	DAY 07	NO.DPTH 6	WND-DIR 180	WW-CODE 47	
LON 57-073W	HR 20.7	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.1	CLD-AMT 9	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
208	0000	134 B	30985		2323	14972
208	0010	1302	30976		2330	14961
208	0020	1063	31211		2392	14882
208	0030	0572	31702		2501	14701
208	0050	0122	32141		2576	14517
208	0055	0115	32158		2578	14515

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1340 B	30985		2323	14972	0000	00000	4652
0010	1302	30976		2330	14961	0046	00002	4590
0020	1063	31211		2392	14882	0090	00009	4003
0030	0572	31702		2501	14701	0125	00018	2963
0050	0122	32141		2576	14517	0177	00038	2244

C-REF-NO 004	YR 1963	DEPTH 17	WAVES 1 49X0	AIR T 12.7	VIS 2
CONS. NO 031	MONTH 8	MXSAMPD 00	WAVES 2 49X0	WET B 11.9	STN
LAT 51-210N	DAY 07	NO.DPTH 3	WND-DIR 030	WW-CODE 45	
LON 56-416W	HR 23.8	W-COLOR 20	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
239	0000	104 B	31279		2401	14871
239	0010	0954	31366		2422	14842
239	0015	0948	31372		2423	14841

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	31279		2401	14871	0000	00000	3912
0010	0954	31366		2422	14842	0038	00002	3715

C-REF-NO 004	YR 1963	DEPTH	76	WAVES 1 00X0	AIR T 12.3	VIS 2
CONS. NO 032	MONTH 8	MXSAMPD	01	WAVES 2 00X0	WET B 11.3	STN
LAT 51-216N	DAY 08	NO.DPTH	7	WND-DIR CALM	WW-CODE 45	
LON 56-423W	HR 00.1	W-COLOR	10	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1009.1	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
002	0000	108 B	31258		2392	14885
002	0010	1062	31246		2394	14880
002	0013	0993	31291		2409	14856
002	0020	0931	31392		2427	14835
002	0030	0886	31419		2436	14820
002	0049	0430	31786		2523	14646
002	0070	0294	31954		2549	14594

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	31258		2392	14885	0000	00000	3992
0010	1062	31246		2394	14880	0040	00002	3974
0020	0931	31392		2427	14835	0078	00008	3663
0030	0886	31419		2436	14820	0115	00017	3578
0050	0546 I	3170 I		2503	14693	0180	00043	2938

C-REF-NO 004	YR 1963	DEPTH 85	WAVES 1 00X0	AIR T 10.5	VIS 2
CONS. NO 033	MONTH 8	MXSAMPC 01	WAVES 2 00X0	WET B 10.0	STN
LAT 51-222N	DAY 08	NO.DPTH 8	WND-DIR CALM	WW-CODE 45	
LON 56-432W	HR 00.6	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 9	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
008	0000	104 B	31201		2395	14870
008	0008	1019	31245		2402	14864
008	0011	1012	31289		2406	14863
008	0018	0984	31339		2415	14854
008	0028	0871	31431		2439	14815
008	0048	0499	31638		2504	14673
008	0073	0276	31945		2549	14586
008	0078	0271	31939		2549	14585

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1040 B	31201		2395	14870	0000	00000	3970
0010	1014	31274		2405	14863	0039	00002	3877
0020	0967	31356		2419	14848	0078	00008	3744
0030	0834 F	31450		2446	14801	0114	00017	3482
0050	0470	3167 C		2510	14662	0178	00043	2879
0075	0274	3193 D		2548	14585	0246	00085	2512

C-REF-NO 004 YR 1963 DEPTH 98 WAVES 1 00X0 AIR T 11.0 VIS 2
 CONS. NO 034 MONTH 8 MXSAMPD 01 WAVES 2 00X0 WET B 10.2 STN
 LAT 51-226N DAY 08 NO.DPTH 7 WND-DIR CALM WW-CODE 45
 LON 56-436W HR 01.0 W-COLOR WND-SPD 00 CLD-TPE X
 MARSD SQ 186 C/I 1810 W-TRNSP BARD 1009.4 CLD-AMT 9 HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
012	0000	093 B	30560		2363	14821
012	0010	1016	30897		2375	14859
012	0020	0931	31133		2407	14832
012	0030	0754 C	31446		2457	14770
012	0050	0409	31563		2507	14634
012	0075	0262	31909		2548	14580
012	0090	0246	31946		2552	14576

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	VA
0000	0930 B	30560		2363	14821	0000	00000	4177
0010	1016	30897		2375	14859	0042	00002	4186
0020	0931	31133		2407	14832	0063	00008	3850
0030	0754 C	31446		2457	14770	0119	00017	3376
0050	0409	31563		2507	14634	0182	00043	2902
0075	0262	31909		2548	14580	0250	00086	2516

C-REF-NO 004	YR 1963	DEPTH 75	WAVES 1 00X0	AIR T 09.4	VIS 2
CONS. NO 035	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 08.6	STN
LAT 51-239N	DAY 08	NO.DPTH 6	WND-DIR CALM	WW-CODE 45	
LON 56-453W	HR 01.5	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 9	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
016	0000	075 B	29795		2329	14742
016	0010	0753	30171		2358	14750
016	0020	0663	30637		2406	14722
016	0030	0632	31038		2441	14716
016	0050	0456 B	31279		2480	14650
016	0070	0257	31887		2546	14577

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0750 B	29795		2329	14742	0000	00000	4601
0010	0753	30171		2358	14750	0045	00002	4324
0020	0663	30637		2406	14722	0086	00008	3865
0030	0632	31038		2441	14716	0123	00018	3529
0050	0456 B	31279		2480	14650	0190	00045	3160

C-REF-NO 004	YR 1963	DEPTH 60	WAVES 1 00X0	AIR T 09.2	VIS 1
CONS. NO 036	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 08.9	STN
LAT 51-252N	DAY 08	NO.DPTH 5	WND-DIR CALM	WW-CODE 47	
LOX 56-469W	HR 02.3	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 9	HW 11

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
024	0000	066 B	29850		2344	14707
024	0010	0582	29885		2356	14678
024	0020	0562	30104		2376	14674
024	0030	0400 C	30860		2452	14618
024	0050	0336	31389		2500	14601

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0660 B	29850		2344	14707	0000	00000	4450
0010	0582	29885		2356	14678	0044	00002	4336
0020	0562	30104		2376	14674	0087	00009	4151
0030	0400 C	30860		2452	14618	0125	00018	3429
0050	0336	31389		2500	14601	0189	00044	2968

C-REF-NO 004	YR 1963	DEPTH 61	WAVES 1 00X0	AIR T 09.5	VIS 5
CONS. NO 037	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 08.6	STN
LAT 51-266N	DAY 08	NO.DPTH 5	WND-DIR 020	WW-CODE 43	
LON 56-486W	HR 02.7	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 9	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
029	0000	068 B	29707		2331	14713
029	0010	0533	29731		2350	14655
029	0020	0481	30050		2380	14640
029	0030	0365	30832		2453	14603
029	0050	0204	31596		2527	14546

*WAVES NOT COMPATIBLE WITH WIND

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0680 B	29707		2331	14713	0000	00000	4581
0010	0533	29731		2350	14655	0045	00002	4401
0020	0481	30050		2380	14640	0088	00009	4109
0030	0365	30832		2453	14603	0126	00018	3413
0050	0204	31596		2527	14546	0187	00043	2710

C-REF-NO 004	YR 1963	DEPTH 102	WAVES 1 49X0	AIR T 09.6	VIS 5
CONS. NO 038	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 08.6	STN
LAT 51-271N	DAY 08	NO.DPTH 8	WND-DIR 020	WW-CODE 45	
ION 56-493W	HR 03.1	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 9	HW 13

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
033	0000	073 B	28242		2210	14714
033	0010	0620	29643		2333	14690
033	0013	0609	29697		2338	14687
033	0020	0500	29890		2366	14645
033	0030	0435	30402		2413	14627
033	0050	0378	30773		2447	14611
033	0075	0199	31602		2528	14548
033	0095	0194	31592		2527	14549

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0730 B	28242		2210	14714	0000	00000	5738
0010	0620	29643		2333	14690	0052	00002	4560
0020	0500	29890		2366	14645	0096	00009	4248
0030	0435	30402		2413	14627	0136	00019	3800
0050	0378	30773		2447	14611	0209	00049	3469
0075	0199	31602		2528	14548	0287	00097	2703

C-REF-NO 004	YR 1963	DEPTH 98	WAVES 1 00X0	AIR T 09.5	VIS 5
CONS. NO 039	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 08.5	STN
LAT 51-275N	DAY 08	NO.DPTH 8	WND-DIR 030	WW-CODE 45	
LON 56-498W	HR 03.6	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 9	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
038	0000	066 B	29607		2325	14704
038	0010	0539	29897		2362	14660
038	0013	0520	29881		2363	14652
038	0020	0516	30006		2373	14654
038	0030	0516	30091		2380	14656
038	0050	0407	30538		2426	14620
038	0075	0207	31443		2515	14549
038	0090	0199	31434		2514	14548

*WAVES NOT COMPATIBLE WITH WIND

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0660 B	29607		2325	14704	0000	00000	4632
0010	0539	29897		2362	14660	0045	00002	4282
0020	0516	30006		2373	14654	0087	00009	4177
0030	0516	30091		2380	14656	0129	00019	4113
0050	0407	30538		2426	14620	0207	00051	3673
0075	0207	31443		2515	14549	0289	00102	2829

C-REF-NO 004 YR 1963 DEPTH 60 WAVES 1 49X0 AIR T 10.4 VIS
 CONS. NO 040 MONTH 8 MXSAMPD 00 WAVES 2 00X0 WET B 09.5 STN
 LAT 51-273N DAY 08 NO. DPTH 5 WND-DIR 030 WW-CODE 45
 LON 56-502W HR 04.1 W-COLOR WND-SPD 01 CLD-TPE X
 BARO 50 106 C/Y 1810 W-TRNSP BARO 1009.8 CLD-AMT 9

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
042	0000	058 B	29868		2355	14675
042	0010	0549	30020		2371	14666
042	0020	0450	30404		2411	14631
042	0030	0346	30823		2454	14594
042	0050	0268	31215		2492	14569

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	0580 B	29868		2355	14675	0000	00000	4346
0010	0549	30020		2371	14666	0043	00002	4200
0020	0450	30404		2411	14631	0083	00008	3812
0030	0346	30823		2454	14594	0119	00017	3404
0050	0268	31215		2492	14569	0184	00044	3045

C-REF-NO 004	YR 1963	DEPTH 96	WAVES 1 49X0	AIR T 09.2	VIS 4
CONS. NO 041	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 08.4	STN
LAT 51-275N	DAY 08	NO.DPTH 8	WND-DIR 040	WW-CODE 50	
LON 56-498W	HR 04.3	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.4	CLD-AMT 9	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
046	0000	057 B	29635		2338	14668
046	0010	0598	29718		2341	14682
046	0013	0591	29740		2344	14680
046	0020	0552	29924		2363	14667
046	0029	0540	30019		2372	14665
046	0049	0378	30643		2437	14609
046	0073	0222	31401		2510	14555
046	0088	0206	31463		2516	14551

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0570 B	29635		2338	14668	0000	00000	4511
0010	0598	29718		2341	14682	0045	00002	4479
0020	0552	29924		2363	14667	0089	00009	4276
0030	0534 B	3004 B		2374	14663	0131	00020	4167
0050	0369	3068 B		2441	14606	0209	00051	3530
0075	0230 H	3134 I		2504	14558	0290	00102	2927

C-REF-NO 004	YR 1963	DEPTH 104	WAVES 1 49X0	AIR T 09.8	VIS 3
CONS. NO 042	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 08.9	STN
LAT 51-271N	DAY 08	NO.DPTH 8	WND-DIR 040	WW-CODE 47	
LON 56-493W	HR 04.9	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
050	0000	062 B	29684		2336	14689
050	0010	0546	29760		2351	14661
050	0013	0537	29757		2351	14658
050	0020	0496	29964		2372	14645
050	0030	0471	30225		2395	14639
050	0050	0337	31044		2473	14597
050	0075	0184	31564		2526	14541
050	0095	0181	31553		2525	14543

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0620 B	29684		2336	14689	0000	00000	4529
0010	0546	29760		2351	14661	0045	00002	4392
0020	0496	29964		2372	14645	0088	00009	4188
0030	0471	30225		2395	14639	0129	00019	3968
0050	0337	31044		2473	14597	0201	00048	3230
0075	0184	31564		2526	14541	0276	00095	2721

C-REF-NO 004	YR 1963	DEPTH	59	WAVES 1 00X0	AIR T 08.5	VIS 2
CONS. NO 043	MONTH 8	MXSAMPD	00	WAVES 2 00X0	WET B 08.2	STN
LAT 51-266N	DAY 08	NO.DPTH	5	WND-DIR CALM	WW-CODE 45	
LON 56-486W	HR 05.2	W-COLOR		WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1008.4	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
054	0000	059 B	29775		2347	14678
054	0010	0561 B	29895		2360	14669
054	0020	0555	29982		2367	14669
054	0030	0491	30106		2384	14646
054	0050	0214	31501		2519	14549

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0590 B	29775		2347	14678	0000	00000	4427
0010	0561 B	29895		2360	14669	0044	00002	4306
0020	0555	29982		2367	14669	0087	00009	4235
0030	0491	30106		2384	14646	0128	00019	4077
0050	0214	31501		2519	14549	0198	00046	2789

C-REF-NO 004	YR 1963	DEPTH 60	WAVES 1 49X0	AIR T 09.0	VIS 1
CONS. NO 044	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 08.8	STN
LAT 51-252N	DAY 08	NO.DPTH 5	WND-DIR 040	WW-CODE 50	
LON 56-469W	HR 05.5	W-COLOR	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.8	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
058	0000	082 B	30077		2341	14773
058	0010	0582	30379		2395	14684
058	0020	0519	30550		2416	14662
058	0030	0508	30621		2423	14660
058	0050	0368 C	31146		2478	14611

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0820 B	30077		2341	14773	0000	00000	4481
0010	0582	30379		2395	14684	0042	00002	3965
0020	0519	30550		2416	14662	0081	00008	3771
0030	0508	30621		2423	14660	0119	00018	3706
0050	0368 C	31146		2478	14611	0188	00045	3179

C-REF-NO 004	YR 1963	DEPTH 76	WAVES 1 00X0	AIR T 09.5	VIS 1
CONS. NO 045	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 09.2	STN
LAT 51-239N	DAY 08	NO.DPTH 6	WND-DIR CALM	WW-CODE 50	
LGN 56-453W	HR 06.0	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 9	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
062	0000	086 B	30125		2339	14789
062	0010	0606	30692		2417	14698
062	0020	0319	31495		2510	14590
062	0030	0310	31546		2515	14588
062	0050	0310	31591		2518	14592
062	0070	0311	31618		2520	14596

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0860 B	30125		2339	14789	0000	00000	4500
0010	0606	30692		2417	14698	0041	00002	3757
0020	0319	31495		2510	14590	0075	00007	2873
0030	0310	31546		2515	14588	0103	00014	2827
0050	0310	31591		2518	14592	0160	00037	2794

C-REF-NO 004 YR 1963 DEPTH 100 WAVES 1 00X0 AIR T 10.1 VIS 1
 CONS. NO 046 MONTH 8 MXSAMPD 01 WAVES 2 00X0 WET B 10.0 STN
 LAT 51-226N DAY 08 NO.DPTH 7 WND-DIR CALM WW-CODE 45
 LON 56-436W HR 06.5 W-COLOR WND-SPD 00 CLD-TPE X
 MARSD SQ 186 C/I 1810 W-TRNSP BARO 1008.4 CLD-AMT 9 HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
066	0000	080 B	30197		2353	14767
066	0008	0763	30510		2383	14758
066	0018	0830	31130		2422	14793
066	0028	0575	31662		2497	14701
066	0048	0203	31915		2552	14550
066	0073	0225	32035		2560	14565
066	0088	0196	32057		2564	14555

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0800 B	30197		2353	14767	0000	00000	4365
0010	0784 I	3063 C		2389	14768	0042	00002	4024
0020	0790 I	3125 B		2437	14780	0080	00008	3568
0030	0526 C	3172 E		2507	14682	0113	00016	2903
0050	0196 H	31931		2554	14547	0167	00038	2451
0075	0155 I	3205 C		2567	14534	0227	00076	2331

C-REF-NO 004	YR 1963	DEPTH 87	WAVES 1 00X0	AIR T 10.0	VIS 0
CONS. NO 047	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 10.0	STN
LAT 51-222N	DAY 08	NO.DPTH 8	WND-DIR CALM	WW-CODE 47	
LON 56-432W	HR 06.7	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 9	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
070	0000	078 B	30178		2355	14759
070	0010	0822	31082		2419	14788
070	0013	0823	31160		2425	14790
070	0020	0658 B	31602		2482	14732
070	0030	0334	31921		2542	14604
070	0050	0248	32045		2560	14572
070	0075	0204	32070		2565	14557
070	0080	0203	32073		2565	14557

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0780 B	30178		2355	14759	0000	00000	4353
0010	0822	31082		2419	14788	0041	00002	3736
0020	0658 B	31602		2482	14732	0075	00007	3137
0030	0334	31921		2542	14604	0104	00014	2564
0050	0248	32045		2560	14572	0154	00035	2402
0075	0204	32070		2565	14557	0214	00073	2351

C-REF-NO 004	YR 1963	DEPTH 68	WAVES 1 00X0	AIR T 10.5	VIS 0
CONS. NO 048	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 10.3	STN
LAT 51-216N	DAY 08	NO.DPTH 7	WND-DIR CALM	WW-CODE 48	
ION 56-423W	HR 07.3	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.1	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
074	0000	095 B	31399		2425	14839
074	0010	0904 B	31448		2436	14824
074	0013	0859	31519		2448	14809
074	0020	0712 C	31628		2477	14754
074	0030	0652 B	31689		2490	14733
074	0050	0241	32004		2557	14568
074	0059	0229	32024		2559	14564

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0950 B	31399		2425	14839	0000	00000	3683
0010	0904 B	31448		2436	14824	0036	00002	3580
0020	0712 C	31628		2477	14754	0070	00007	3185
0030	0652 B	31689		2490	14733	0102	00015	3066
0050	0241	32004		2557	14568	0157	00037	2427

C-REF-NO 004	YR 1963	DEPTH 16	WAVES 1 00X0	AIR T 10.4	VIS 1
CONS. NO 049	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 10.0	STN
LAT 51-210N	DAY 08	NO.DPTH 2	WND-DIR CALM	WW-CODE 50	
LON 56-416W	HR 07.7	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.1	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
079	0000	082 B	31484		2451	14791
079	0010	0838	31510		2451	14800

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0820 B	31484		2451	14791	0000	00000	3432
0010	0838	31510		2451	14800	0035	00002	3439

C-REF-NO 004	YR 1963	DEPTH 62	WAVES 1 00X0	AIR T 10.2	VIS 1
CONS. NO 050	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 10.2	STN
LAT 51-216N	DAY 08	NO.DPTH 7	WND-DIR CALM	WW-CODE 42	
LON 56-423W	HR 08.0	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 9	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
082	0000	093 B	31352		2424	14831
082	0010	0863	31473		2444	14809
082	0013	0825	31532		2454	14796
082	0020	0729	31614		2474	14761
082	0030	0672	31663		2485	14741
082	0050	0298	31957		2548	14592
082	0057	0265	31965		2552	14579

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0930 B	31352		2424	14831	0000	00000	3688
0010	0863	31473		2444	14809	0036	00002	3502
0020	0729	31614		2474	14761	0070	00007	3217
0030	0672	31663		2485	14741	0102	00015	3110
0050	0298	31957		2548	14592	0158	00038	2507

C-REF-NO 004	YR 1963	DEPTH 84	WAVES 1 49X0	AIR T 10.0	VIS 2
CONS. NO 051	MONTH 8	MXSAMPD 01	WAVES 2 06X1	WET B 09.2	STN
LAT 51-221N	DAY 08	NO.DPTH 8	WND-DIR 080	WW-CODE 45	
LON 56-432W	HR 08.5	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
086	0000	090 B	31268		2422	14819
086	0010	0861	31364		2436	14807
086	0013	0852	31370		2438	14804
086	0020	0612	31655		2492	14715
086	0030	0310	31904		2543	14593
086	0050	0235	31988		2556	14565
086	0075	0231	32027		2559	14568
086	0077	0232	32008		2558	14568

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0900 B	31268		2422	14819	0000	00000	3706
0010	0861	31364		2436	14807	0037	00002	3581
0020	0612	31655		2492	14715	0070	00007	3043
0030	0310	31904		2543	14593	0098	00014	2557
0050	0235	31988		2556	14565	0148	00034	2435
0075	0231	32027		2559	14568	0209	00073	2403

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 49X0	AIR T 10.0	VIS 0
CONS. NO 052	MONTH 8	MXSAMPD 01	WAVES 2 06X1	WET B 09.6	STN
LAT 51-226N	DAY 08	NO.DPTH 7	WND-DIR 080	WW-CODE 45	
LON 56-436W	HR 08.8	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
090	0000	090 B	31277		2423	14819
090	0010	0845	31325		2435	14800
090	0020	0776	31404		2451	14776
090	0030	0665	31593		2481	14737
090	0050	0281	31919		2547	14584
090	0075	0266	31950		2551	14582
090	0095	0242	31972		2554	14575

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0900 B	31277		2423	14819	0000	00000	3700
0010	0845	31325		2435	14800	0037	00002	3587
0020	0776	31404		2451	14776	0072	00007	3435
0030	0665	31593		2481	14737	0105	00016	3153
0050	0281	31919		2547	14584	0162	00038	2522
0075	0266	31950		2551	14582	0225	00079	2488

C-REF-NO 004	YR 1963	DEPTH 76	WAVES 1 49X0	AIR T 10.0	VIS 1
CONS. NO 053	MONTH 8	MXSAMPD 01	WAVES 2 06X1	WET B 09.7	STN
LAT 51-238N	DAY 08	NO.DPTH 6	WND-DIR 080	WW-CODE 45	
LON 56-453W	HR 09.4	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 9	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
095	0000	079 B	30283		2361	14764
095	0010	0816	30672		2388	14781
095	0020	0670	30902		2426	14728
095	0030	0345	31466		2505	14602
095	0050	0286	31751		2533	14584
095	0071	0243	31848		2544	14570

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0790 B	30283		2361	14764	0000	00000	4288
0010	0816	30672		2388	14781	0042	00002	4033
0020	0670	30902		2426	14728	0081	00008	3675
0030	0345	31466		2505	14602	0114	00016	2917
0050	0286	31751		2533	14584	0170	00039	2654

C-REF-NO 004 YR 1963 DEPTH 59 WAVES 1 49X0 AIR T 09.2 VIS 1
 CONS. NO 054 MONTH 8 MXSAMPD 01 WAVES 2 18X1 WET B 09.0 STN
 LAT 51-252N DAY 08 NO.DPTH 6 WND-DIR 060 WW-CODE 45
 LON 56-469W HR 09.8 W-COLOR 30 WND-SPD 01 CLD-TPE X
 MARSD SQ 186 C/I 1810 W-TRNSP BARO 1007.1 CLD-AMT 9 HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
099	0000	080 B	30044		2341	14765
099	0010	0754	30480		2382	14754
099	0020	0426	31183		2475	14632
099	0030	0306	31373		2501	14584
099	0050	0312	31625		2521	14594
099	0054	0312	31637		2522	14595

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0800 B	30044		2341	14765	0000	00000	4479
0010	0754	30480		2382	14754	0043	00002	4095
0020	0426	31183		2475	14632	0080	00008	3202
0030	0306	31373		2501	14584	0111	00015	2955
0050	0312	31625		2521	14594	0168	00039	2770

C-REF-NO 004 YR 1963 DEPTH 56 WAVES 1 04X0 AIR T 09.2 VIS 1
 CONS. NO 055 MONTH 8 MXSAMPD 00 WAVES 2 21X1 WET B 08.9 STN
 LAT 51-265N DAY 08 NO.DPTH 5 WND-DIR 040 WW-CODE 45
 LON 56-486W HR 10.2 W-COLOR 30 WND-SPD 01 CLD-TPE X
 MARSD SQ 186 C/I 1810 W-TRNSP BARO 1006.7 CLD-AMT 9 HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
103	0000	065 B	30039		2360	14706
103	0010	0541	30384		2400	14667
103	0020	0464	30704		2434	14641
103	0030	0387	30930		2459	14613
103	0050	0290	31289		2496	14580

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0650 B	30039		2360	14706	0000	00000	4296
0010	0541	30384		2400	14667	0041	00002	3918
0020	0464	30704		2434	14641	0079	00003	3600
0030	0387	30930		2459	14613	0114	00017	3358
0050	0290	31289		2496	14580	0178	00042	3006

C-REF-NO 004	YR 1963	DEPTH 96	WAVES 1 02X0	AIR T 09.0	VIS 1
CONS. NO 056	MONTH 8	MXSAMPD 01	WAVES 2 22X1	WET B 08.7	STN
LAT 51-271N	DAY 08	NO.DPTH 8	WND-DIR 020	WW-CODE 45	
LON 56-493W	HR 10.5	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD. SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
106	0000	057 B	30009		2367	14673
106	0010	0563 C	30042		2371	14672
106	0013	0557	30071		2374	14670
106	0020	0555	30083		2375	14671
106	0030	0547	30104		2378	14669
106	0050	0415	30759		2443	14626
106	0075	0389	30819		2450	14620
106	0091	0312	31184		2486	14594

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0570 B	30009		2367	14673	0000	00000	4230
0010	0563 C	30042		2371	14672	0042	00002	4198
0020	0555	30083		2375	14671	0084	00009	4159
0030	0547	30104		2378	14669	0126	00019	4136
0050	0415	30759		2443	14626	0203	00050	3513
0075	0389	30819		2450	14620	0290	00106	3445

C-REF-NO 004	YR 1963	DEPTH 98	WAVES 1 02X0	AIR T 09.7	VIS 1
CONS. NO 057	MONTH 8	MXSAMPD 01	WAVES 2 22X2	WET B 09.4	STN
LAT 51-275N	DAY 08	NO.DPTH 8	WND-DIR 020	WW-CODE 45	
LON 56-497W	HR 10.8	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
110	0000	057 B	29906		2359	14671
110	0010	0550 B	30079		2375	14667
110	0013	0543	30145		2381	14665
110	0020	0526	30196		2387	14660
110	0030	0464	30458		2414	14640
110	0050	0346	30981		2467	14600
110	0075	0297	31209		2489	14586
110	0093	0272	31306		2499	14579

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0570 B	29906		2359	14671	0000	00000	4307
0010	0550 B	30079		2375	14667	0042	00002	4156
0020	0526	30196		2387	14660	0084	00008	4044
0030	0464	30458		2414	14639	0123	00018	3785
0050	0346	30981		2467	14600	0194	00047	3285
0075	0297	31209		2489	14586	0274	00098	3073

C-REF-NO 004	YR 1963	DEPTH 84	WAVES 1 02X0	AIR T 10.4	VIS 1
CONS. NO 058	MONTH 8	MXSAMPD 01	WAVES 2 22X2	WET B 10.2	STN
LAT 51-278N	DAY 08	NO.DPTH 7	WND-DIR 020	WW-CODE 45	
LON 56-502W	HR 11.4	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 9	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
116	0000	052 B	30033		2375	14652
116	0010	0538 B	30133		2381	14663
116	0020	0432	30612		2430	14626
116	0030	0330 B	30924		2464	14589
116	0049	0313	31115		2480	14587
116	0074	0266	31332		2501	14575
116	0078	0264	31299		2499	14573

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0520 B	30033		2375	14652	0000	00000	4159
0010	0538 B	30133		2381	14663	0041	00002	4103
0020	0432	30612		2430	14626	0080	00008	3639
0030	0330 B	30924		2464	14589	0115	00017	3314
0075	0269	3131 D		2499	14575	0258	00092	2978

C-REF-NO 004	YR 1963	DEPTH 96	WAVES 1 03X0	AIR T 10.4	VIS 1
CONS. NO 059	MONTH 8	MXSAMPD 01	WAVES 2 22X2	WET B 10.2	STN
LAT 51-275N	DAY 08	NO.DPTH 8	WND-DIR 030	WW-CODE 45	
LON 56-497W	HR 11.8	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 9	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
119	0000	049 B	30416		2408	14645
119	0010	0485	30414		2409	14644
119	0013	0432	30688		2436	14626
119	0020	0386	30862		2454	14610
119	0030	0364	30962		2464	14604
119	0050	0346	30044		2392	14587
119	0075	0265	31299		2499	14573
119	0093	0258 B	31024		2477	14569

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0490 B	30416		2408	14645	0000	00000	3841
0010	0485	30414		2409	14644	0039	00002	3838
0020	0386	30862		2454	14610	0075	00007	3408
0030	0364	30962		2464	14604	0109	00016	3314
0050	0346	30044		2392	14587	0182	00047	3993
0075	0265	31299		2499	14573	0270	00101	2980

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 02X0	AIR T 10.4	VIS I
CONS. NO 060	MONTH 8	MXSAMPD 01	WAVES 2 22X2	WET B 10.2	STN
LAT 51-271N	DAY 08	NO.DPTH 8	WND-DIR 020	WW-CODE 45	
LON 56-492W	HR 12.1	W-COLOR 30	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 9	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
123	0000	058 B	30306		2390	14681
123	0009	0514	30294		2396	14655
123	0012	0492	31035		2457	14656
123	0018	0354	31019		2469	14598
123	0027	0346	31199		2484	14599
123	0045	0305	31194		2487	14584
123	0067	0300	31286		2495	14587
123	0081	0276 B				

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0580 B	30306		2390	14681	0000	00000	4017
0010	0508	3055 I		2417	14656	0039	00002	3761
0020	0342 G	3105 D		2473	14594	0074	00007	3226
0030	0339 B	3121 D		2486	14597	0106	00015	3103
0050	0303 C	3131 I		2496	14586	0167	00040	3005
0075	0281 D							

C-REF-NO 004 YR 1963 DEPTH 56 WAVES 1 02X0 AIR T 08.2 VIS 1
 CONS. NO 061 MONTH 8 MXSAMPD 00 WAVES 2 22X2 WET B 08.1 STN
 LAT 51-265N DAY 08 NO.DPTH 5 WND-DIR 020 WW-CODE 45
 LON 56-486W HR 12.5 W-COLOR 30 WND-SPD 02 CLD-TPE X
 MARSD SQ 186 C/I 1810 W-TRNSP BARO 1006.7 CLD-AMT 9 HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
126	0000	057 B	30075		2373	14674
126	0010	0492	30404		2407	14647
126	0020	0404	30832		2450	14618
126	0030	0352	31048		2472	14600
126	0050	0278	31426		2508	14576

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0570 B	30075		2373	14674	0000	00000	4180
0010	0492	30404		2407	14647	0040	00002	3852
0020	0404	30832		2450	14618	0077	00008	3447
0030	0352	31048		2472	14600	0111	00016	3239
0050	0278	31426		2508	14576	0172	00041	2893

C-REF-NO 004	YR 1963	DEPTH 56	WAVES 1 02X0	AIR T	VIS 1
CONS. NO 062	MONTH 8	MXSAMPD 00	WAVES 2 22X2	WET B	STN
LAT 51-252N	DAY 08	NO.DPTH 5	WND-DIR 020	WW-CODE 45	
LON 56-469W	HR 12.9	W-COLOR 40	WND-SPD 02	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 9	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
130	0000	075 B	30025		2347	14745
130	0010	0615	30274		2383	14696
130	0020	0639	30529		2400	14711
130	0030	0503	30738		2432	14660
130	0050	0293	31782		2535	14588

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0750 B	30025		2347	14745	0000	00000	4429
0010	0615	30274		2383	14696	0043	00002	4081
0020	0639	30529		2400	14711	0083	00008	3918
0030	0503	30738		2432	14660	0121	00018	3613
0050	0293	31782		2535	14588	0184	00043	2636

C-REF-NO 004	YR 1963	DEPTH 84	WAVES 1 02X0	AIR T	VIS 5
CONS. NO 063	MONTH 8	MXSAMPD 01	WAVES 2 22X2	WET B	STN.
LAT 51-238N	DAY 08	NO.DPTH 7	WND-DIR 020	WW-CODE 42	
LON 56-453W	HR 13.4	W-COLOR 40	WND-SPD 02	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 9	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
135	0000	081 B	30051		2340	14769
135	0010	0812	30199		2352	14773
135	0020	0732	30707		2402	14750
135	0030	0358 B	31304		2491	14606
135	0050	0293	31697		2528	14586
135	0075	0240	31937		2552	14571
135	0079	0240	31968		2554	14572

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0810 B	30051		2340	14769	0000	00000	4487
0010	0812	30199		2352	14773	0045	00002	4381
0020	0732	30707		2402	14750	0086	00009	3898
0030	0358 B	31304		2491	14606	0121	00017	3050
0050	0293	31697		2528	14586	0179	00041	2700
0075	0240	31937		2552	14571	0244	00082	2478

C-REF-NO 004	YR 1963	DEPTH 81	WAVES 1 49X0	AIR T 13.1	VIS 6
CONS. NO 064	MONTH 8	MXSAMPD 01	WAVES 2 23X2	WET B 12.2	STN
LAT 51-226N	DAY 08	NO.DPTH 6	WND-DIR 990	WW-CODE 28	
LON 56-436W	HR 13.9	W-COLOR 40	WND-SPD 01	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 8	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
140	0000	079 B	30311		2364	14764
140	0010	0776	30721		2398	14766
140	0020	0706	31495		2468	14750
140	0030	0456	31787		2520	14654
140	0050	0317	31878		2541	14599
140	0075	0254	31975		2553	14577

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0790 B	30311		2364	14764	0000	00000	4267
0010	0776	30721		2398	14766	0041	00002	3943
0020	0706	31495		2468	14750	0078	00007	3276
0030	0456	31787		2520	14654	0108	00015	2777
0050	0317	31878		2541	14599	0162	00037	2583
0075	0254	31975		2553	14577	0225	00077	2460

C-REF-NO 004	YR 1963	DEPTH	90	WAVES 1 49X0	AIR T 14.2	VIS 6
CONS. NO 065	MONTH 8	MXSAMPD	01	WAVES 2 25X2	WET B 13.1	STN
LAT 51-221N	DAY 08	NO.DPTH	8	WND-DIR 990	WW-CODE 28	
LON 56-431W	HR 14.2	W-COLOR	40	WND-SPD 01	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1006.7	CLD-AMT 8	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
143	0000	084 B	30852		2399	14791
143	0010	0848	31129		2419	14799
143	0013	0843	31239		2429	14799
143	0020	0792	31464		2454	14783
143	0030	0610	31696		2496	14716
143	0050	0298	31925		2546	14592
143	0075	0275	31932		2548	14586
143	0083	0272	31977		2552	14587

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0840 B	30852		2399	14791	0000	00000	3931
0010	0848	31129		2419	14799	0039	00002	3737
0020	0792	31464		2454	14783	0074	00007	3412
0030	0610	31696		2496	14716	0107	00016	3011
0050	0298	31925		2546	14592	0162	00038	2532
0075	0275	31932		2548	14586	0226	00078	2509

C-REF-NO 004	YR 1963	DEPTH 66	WAVES 1 49X0	AIR T 14.8	VIS 6
CONS. NO 066	MONTH 8	MXSAMPD 01	WAVES 2 24X2	WET B 13.9	STN
LAT 51-216N	DAY 08	NO.DPTH 7	WND-DIR 990	WW-CODE 28	
LON 56-423W	HR 14.5	W-COLOR 40	WND-SPD 01	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.4	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
146	0000	089 B	31339		2429	14816
146	0010	0849	31432		2443	14803
146	0013	0827	31470		2449	14796
146	0020	0746	31566		2468	14767
146	0030	0713	31640		2478	14756
146	0050	0428	31834		2527	14646
146	0061	0404	31865		2532	14638

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0890 B	31339		2429	14816	0000	00000	3639
0010	0849	31432		2443	14803	0036	00002	3513
0020	0746	31566		2468	14767	0070	00007	3275
0030	0713	31640		2478	14756	0102	00015	3178
0050	0428	31834		2527	14646	0162	00039	2715

C-REF-NO 004	YR 1963	DEPTH 16	WAVES 1 49X0	AIR T 14.7	VIS 6
CONS. NO 067	MONTH 8	MXSAMPD 00	WAVES 2 24X1	WET B 13.8	STN
LAT 51-210N	DAY 08	NO.DPTH 2	WND-DIR 990	WW-CODE 28	
LON 56-416W	HR 14.7	W-COLOR 40	WND-SPD 01	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 8	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
149	0000	095 B	31414		2426	14840
149	0010	0794	31522		2458	14783

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0950 B	31414		2426	14840	0000	00000	3672
0010	0794	31522		2458	14783	0035	00002	3370

C-REF-NO 004	YR 1963	DEPTH 75	WAVES 1 22X2	AIR T 16.9	VIS 7
CONS. NO 068	MONTH 8	MXSAMPD 01	WAVES 2 22X3	WET B 15.3	STN
LAT 51-017N	DAY 08	NO.DPTH 6	WND-DIR 220	WW-CODE 03	
LON 57-073W	HR 17.8	W-COLOR 20	WND-SPD 08	CLD-TPE 9	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 8	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
179	0000	135 B	30993		2322	14976
179	0010	1338	30992		2324	14973
179	0020	1303	31028		2334	14964
179	0030	1220	31104		2355	14938
179	0050	0134	32190		2579	14523
179	0070	0102 B	32215		2583	14512

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1350 B	30993		2322	14976	0000	00000	4665
0010	1338	30992		2324	14973	0047	00002	4645
0020	1303	31028		2334	14964	0093	00009	4555
0030	1220	31104		2355	14938	0138	00021	4351
0050	0134	32190		2579	14523	0204	00046	2214

C-REF-NO 004	YR 1963	DEPTH 76	WAVES 1 23X2	AIR T 17.2	VIS 7
CONS. NO 069	MONTH 8	MXSAMPD 01	WAVES 2 23X3	WET B 15.3	STN
LAT 51-026N	DAY 08	NO.DPTH 6	WND-DIR 210	HW-CODE 05	
LON 57-088W	HR 18.2	W-COLOR 20	WND-SPD 07	CLD-TPE 9	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.1	CLD-AMT 8	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
183	0000	137 B	30965		2316	14982
183	0010	1356	30981		2320	14979
183	0020	1243	31087		2350	14944
183	0030	0733	31631		2475	14764
183	0050	0202	32112		2568	14552
183	0070	0072	32264		2589	14499

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1370 B	30965		2316	14982	0000	00000	4723
0010	1356	30981		2320	14979	0047	00002	4687
0020	1243	31087		2350	14944	0093	00009	4402
0030	0733	31631		2475	14764	0131	00019	3211
0050	0202	32112		2568	14552	0187	00041	2318

C-REF-NU 004	YR 1963	DEPTH 66	WAVES 1 2322	AIR T 16.4	VIS 7
CONS. NO 070	MONTH 8	MXSAMPD 01	WAVES 2 2343	WET B 14.9	STN
LAT 51-036N	DAY 08	NO.DPTH 6	WND-DIR 210	WW-CODE 05	
LON 57-108W	HR 18.5	W-COLOR 20	WND-SPD 07	CLD-TPE 9	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.1	CLD-AMT 8	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
186	0000	135 B	31055		2327	14976
186	0010	1343	31026		2326	14975
186	0020	1135	31186		2377	14907
186	0030	0646 C	31667		2489	14730
186	0050	0200	32118		2569	14551
186	0055	0130	32193		2580	14522

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1350 B	31055		2327	14976	0000	00000	4619
0010	1343	31026		2326	14975	0046	00002	4629
0020	1135	31186		2377	14907	0090	00009	4141
0030	0646 C	31667		2489	14730	0127	00018	3075
0050	0200	32118		2569	14551	0181	00039	2312

C-REF-NO 004	YR 1963	DEPTH 48	WAVES 1 2323	AIR T 15.9	VIS 7
CONS. NO 071	MONTH 8	MXSAMPD 00	WAVES 2 2343	WET B 14.9	STN
LAT 51-067N	DAY 08	NO.DPTH 5	WND-DIR 220	WW-CODE 03	
LON 57-161W	HR 19.2	W-COLOR 20	WND-SPD 08	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.1	CLD-AMT 8	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
193	0000	134 B	31001		2325	14972
193	0010	1338	30993		2324	14973
193	0020	1166	31168		2370	14918
193	0030	1006	31333		2411	14864
194	0043		31442			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1340 B	31001		2325	14972	0000	00000	4640
0010	1338	30993		2324	14973	0047	00002	4644
0020	1166	31168		2370	14918	0091	00009	4207
0030	1006	31333		2411	14864	0131	00019	3824

C-REF-NO 004	YR 1963	DEPTH 88	WAVES 1 2322	AIR T 16.3	VIS 7
CONS. NO 072	MONTH 8	MXSAMPD 01	WAVES 2 2343	WET B 15.2	STN
LAT 51-097N	DAY 08	NO.DPTH 7	WND-DIR 210	WW-CODE 03	
LON 57-213W	HR 19.9	W-COLOR 20	WND-SPD 08	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 8	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
201	0000	135 B	31010		2323	14976
201	0010	1349	31004		2323	14977
201	0020	1273	31066		2343	14954
201	0030	0742 B	31573		2469	14767
201	0050	0316	31841		2538	14598
201	0075	0089	32282		2589	14508
201	0080	0059	32348		2596	14496

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1350 B	31010		2323	14976	0000	00000	4652
0010	1349	31004		2323	14977	0047	00002	4657
0020	1273	31066		2343	14954	0093	00009	4472
0030	0742 B	31573		2469	14767	0131	00019	3266
0050	0316	31841		2538	14598	0191	00043	2610
0075	0089	32282		2589	14508	0250	00080	2117

C-REF-NO 004	YR 1963	DEPTH 126	WAVES 1 2222	AIR T 14.0	VIS 7
CONS. NO 073	MONTH 8	MXSAMPD 01	WAVES 2 2233	WET B 13.5	STN
LAT 51-127N	DAY 08	NO.DPTH 8	WND-DIR 210	WW-CODE 40	
LON 57-267W	HR 20.5	W-COLOR 20	WND-SPD 07	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.4	CLD-AMT 8	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
208	0000	095 B	30954		2390	14834
208	0010	0890	30888		2394	14812
208	0020	0594	30986		2442	14699
208	0030	0519	31113		2460	14671
208	0050	0440	31494		2499	14647
208	0075	0091	32274		2588	14509
208	0100	-0074 B	32532		2617	14441
208	0120	-0112	32670		2629	14428

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0950 B	30954		2390	14834	0000	00000	4014
0010	0890	30888		2394	14812	0040	00002	3976
0020	0594	30986		2442	14699	0078	00008	3524
0030	0519	31113		2460	14671	0112	00017	3348
0050	0440	31494		2499	14647	0176	00042	2983
0075	0091	32274		2588	14509	0240	00082	2124
0100	-0074 B	32532		2617	14441	0290	00126	1850

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 2122	AIR T 13.7	VIS 3
CONS. NO 074	MONTH 8	MXSAMPD 01	WAVES 2 2134	WET B 13.5	STN
LAT 51-157N	DAY 08	NO.DPTH 7	WND-DIR 210	WW-CODE 60	
LON 57-321W	HR 21.4	W-COLOR 20	WND-SPD 08	CLO-TPE X	
MARSD SQ 186	C/T 1810	W-TRNSP	BARO 1005.7	CLD-AMT 9	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
216	0000	100 B	30938		2381	14852
216	0010	0982	30932		2383	14847
216	0020	0979				
216	0030	0945 C	30926		2389	14836
216	0050	0805 I	30813		2401	14785
216	0075	0607	30915		2435	14712
216	0095	0545	31075		2454	14692

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1000 B	30938		2381	14852	0000	00000	4102
0010	0982	30932		2383	14847	0041	00002	4080
0020	0979	3094 B		2384	14847	0082	00008	4075
0030	0945 C	30926		2389	14836	0123	00019	4032
0050	0805 I	30813		2401	14785	0203	00051	3919
0075	0607	30915		2435	14712	0297	00111	3597

C-REF-NO 004	YR 1963	DEPTH 122	WAVES 1 2122	AIR T 14.2	VIS 3
CONS. NO 075	MONTH 8	MXSAMPD 01	WAVES 2 2134	WET B 13.8	STN
LAT 51-183N	DAY 08	NO.DPTH 8	WND-DIR 210	WW-CODE 47	
LON 57-367W	HR 22.1	W-COLOR 20	WND-SPD 07	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.4	CLD-AMT 9	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
222	0000	113 B	31102		2372	14901
222	0010	0992	30979		2385	14851
222	0020	0789	30856		2406	14774
222	0030	0731	30966		2423	14755
222	0050	0580	31317		2469	14702
222	0075	0397	31828		2529	14637
222	0100	-0134	32756		2637	14416
222	0115	-0146	32793		2640	14413

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1130 B	31102		2372	14901	0000	00000	4191
0010	0992	30979		2385	14851	0041	00002	4061
0020	0789	30856		2406	14774	0081	00008	3861
0030	0731	30966		2423	14755	0119	00018	3705
0050	0580	31317		2469	14702	0189	00046	3263
0075	0397	31828		2529	14637	0264	00093	2692
0100	-0134	32756		2637	14416	0319	00141	1659

C-REF-NO 004	YR 1963	DEPTH 76	WAVES 1 2122	AIR T 14.9	VIS 3
CONS. NO 076	MONTH 8	MXSAMPD 01	WAVES 2 2134	WET B 13.6	STN
LAT 51-196N	DAY 08	NO.DPTH 6	WND-DIR 210	WW-CODE 45	
LON 57-390W	HR 22.5	W-COLOR 20	WND-SPD 07	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.4	CLD-AMT 9	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
226	0000	125 B	30221		2282	14932
226	0010	1130	31035		2366	14902
226	0020	0710	30834		2415	14743
226	0030	0746	31026		2426	14761
226	0050	0746	31491		2462	14771
226	0070	0564	31658		2498	14703

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1250 B	30221		2282	14932	0000	00000	5049
0010	1130	31035		2366	14902	0047	00002	4242
0020	0710	30834		2415	14743	0087	00008	3775
0030	0746	31026		2426	14761	0124	00018	3679
0050	0746	31491		2462	14771	0195	00046	3334

C-REF-NO 004	YR 1963	DEPTH 58	WAVES 1 2122	AIR T 14.1	VIS 2
CONS. NO 077	MONTH 8	MXSAMPD 00	WAVES 2 2133	WET B 13.9	STN
LAT 51-204N	DAY 08	NO.DPTH 5	WND-DIR 210	WW-CODE 49	
LON 57-405W	HR 22.9	W-COLOR 20	WND-SPD 06	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.7	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
230	0600	125 B	30054		2269	14930
230	0010	1114	31121		2376	14897
230	0020	0988	31245		2407	14855
230	0030	0899	31272		2423	14823
230	0050	0714	31503		2467	14758

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1250 B	30054		2269	14930	0000	00000	5173
0010	1114	31121		2376	14897	0047	00002	4152
0020	0988	31245		2407	14855	0087	00008	3859
0030	0899	31272		2423	14823	0125	00018	3707
0050	0714	31503		2467	14758	0195	00046	3284

C-REF-NO 004	YR 1963	DEPTH 78	WAVES 1 19X0	AIR T 11.1	VIS 0
CONS. NO 078	MONTH 8	MXSAMPD 01	WAVES 2 1933	WET B 11.1	STN
LAT 51-278N	DAY 09	NO.DPTH 6	WND-DIR 190	WW-CODE 45	
LON 56-500W	HR 02.7	W-COLOR 30	WND-SPD 03	CLD-TPE X	
MARSD SQ 186	C/I 1610	W-TRNSP	BARO 1007.4	CLD-AMT 9	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
029	0000	054 B	29984		2369	14660
029	0010	0435	30478		2419	14624
029	0020	0334	30874		2459	14588
029	0030	0296	31081		2479	14576
029	0050	0262	31240		2494	14567
029	0070	0206	31419		2513	14548

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0540 B	29984		2369	14660	0000	00000	4217
0010	0435	30478		2419	14624	0040	00002	3742
0020	0334	30874		2459	14588	0076	00007	3355
0030	0296	31081		2479	14576	0108	00016	3168
0050	0262	31240		2494	14567	0171	00041	3022

C-REF-NO 004	YR 1963	DEPTH 96	WAVES 1 19X0	AIR T 11.1	VIS 0
CONS. NO 079	MONTH 8	MXSAMPD 01	WAVES 2 1933	WET B 11.1	STN
LAT 51-275N	DAY 09	NO.DPTH 8	WND-DIR 190	WW-CODE 45	
LON 56-497W	HR 03.2	W-COLOR 30	WND-SPD 04	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 9	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
033	0000	058 B	29766		2347	14674
033	0010	0561	29910		2361	14669
033	0013	0561	29887		2359	14669
033	0020	0561	29877		2358	14670
033	0030	0554	29895		2360	14669
033	0050	0282				
033	0074	0212	31555		2523	14553
033	0089	0204	32183		2574	14560

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0580 B	29766		2347	14674	0000	00000	4423
0010	0561	29910		2361	14669	0044	00002	4295
0020	0561	29877		2358	14670	0087	00009	4321
0030	0554	29895		2360	14669	0130	00020	4300
0050	0282	3047 I		2432	14565	0210	00052	3618
0075	0186 I	3145 I		2516	14540	0291	00102	2811

C-REF-NO 004	YR 1963	DEPTH 104	WAVES 1 19X0	AIR T 11.1	VIS 0
CONS. NO 080	MONTH 8	MXSAMPD 01	WAVES 2 1933	WET B 11.1	STN
LAT 51-271N	DAY 09	NO.DPTH 8	WND-DIR 190	WW-CODE 45	
LON 56-492W	HR 03.7	W-COLOR 30	WND-SPD 03	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 9	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
037	0000	060 B	29542		2327	14679
037	0010	0564 B	29866		2357	14670
037	0013	0544	29969		2367	14664
037	0020	0521	30147		2384	14658
037	0030	0418	30554		2426	14621
037	0050	0306	31143		2483	14585
037	0074	0210	31453		2515	14551
037	0096	0202	31469		2517	14551

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0600 B	29542		2327	14679	0000	00000	4613
0010	0564 B	29866		2357	14670	0045	00002	4331
0020	0521	30147		2384	14658	0087	00009	4076
0030	0418	30554		2426	14621	0126	00018	3670
0050	0306	31143		2483	14585	0194	00046	3129
0075	0216 E	3148 D		2517	14554	0269	00093	2807

C-REF-NO 004	YR 1963	DEPTH 56	WAVES 1 19X0	AIR T 11.1	VIS 0
CONS. NO 081	MONTH 8	MXSAMPD 00	WAVES 2 1933	WET B 11.1	STN
LAT 51-265N	DAY 09	NO.DPTH 5	WND-DIR 190	WW-CODE 45	
LON 56-486W	HR 04.0	W-COLOR 30	WND-SPD 02	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 9	HW 13

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
041	0000	062 B	29588		2329	14687
041	0010	0524	30097		2379	14656
041	0020	0368	30765		2448	14601
041	0030	0265	31269		2496	14565
041	0050	0210	31429		2513	14546

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0620 B	29588		2329	14687	0000	00000	4601
0010	0524	30097		2379	14656	0044	00002	4116
0020	0368	30765		2448	14601	0082	00008	3466
0030	0265	31269		2496	14565	0114	00016	3002
0050	0210	31429		2513	14546	0173	00040	2841

C-REF-NO 004	YR 1963	DEPTH 66	WAVES 1 19X0	AIR T 11.1	VIS 0
CONS. NO 082	MONTH 8	MXSAMPD 01	WAVES 2 1933	WET B 11.1	STN
LAT 51-252N	DAY 09	NO.DPTH 6	WND-DIR 190	WW-CODE 43	
LON 56-469W	HR 04.4	W-COLOR 30	WND-SPD 02	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 9	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
045	0000	062 B	29724		2339	14689
045	0010	0565	30006		2368	14672
045	0020	0386	30676		2439	14608
045	0030	0344	31016		2470	14596
045	0050	0314	31354		2499	14591
045	0061	0312	31408		2504	14593

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0620 B	29724		2339	14689	0000	00000	4498
0010	0565	30006		2368	14672	0044	00002	4227
0020	0386	30676		2439	14608	0083	00008	3549
0030	0344	31016		2470	14596	0117	00017	3256
0050	0314	31354		2499	14591	0180	00042	2976

C-REF-NO 004	YR 1963	DEPTH 78	WAVES 1 19X0	AIR T 11.1	VIS 4
CONS. NO 083	MONTH 8	MXSAMPD 01	WAVES 2 1933	WET B 11.1	STN
LAT 51-238N	DAY 09	NO.DPTH 6	WND-DIR 190	WW-CODE 43	
LON 56-453W	HR 04.8	W-COLOR 30	WND-SPD 02	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 9	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
049	0000	065 B	30032		2360	14705
049	0010	0621	30070		2366	14696
049	0020	0491	30369		2404	14648
049	0030	0404	30987		2462	14621
049	0050	0278	31597		2521	14579
049	0075	0257	31742		2535	14575

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0650 B	30032		2360	14705	0000	00000	4302
0010	0621	30070		2366	14696	0043	00002	4241
0020	0491	30369		2404	14648	0084	00008	3878
0030	0404	30987		2462	14621	0120	00017	3330
0050	0278	31597		2521	14579	0181	00042	2764
0075	0257	31742		2535	14575	0249	00085	2638

C-REF-NO 004	YR 1963	DEPTH 102	WAVES 1 19X0	AIR T 11.8	VIS 4
CONS. NO 084	MONTH 8	MXSAMPD 01	WAVES 2 1933	WET B 11.7	STN
LAT 51-226N	DAY 09	NO.DPTH 7	WND-DIR 190	WW-CODE 40	
LON 56-436W	HR 05.3	W-COLOR 30	WND-SPD 02	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.1	CLD-AMT 9	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
054	0000	071 B	29908		2343	14728
054	0010	0741	30895		2416	14755
054	0020	0766	31367		2450	14772
054	0030	0735	31433		2459	14762
054	0050	0496	31649		2505	14672
054	0075	0240	31844		2544	14569
054	0095	0236 B	31894		2548	14572

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0710 B	29908		2343	14728	0000	00000	4466
0010	0741	30895		2416	14755	0041	00002	3768
0020	0766	31367		2450	14772	0078	00007	3449
0030	0735	31433		2459	14762	0112	00016	3361
0050	0496	31649		2505	14672	0175	00042	2923
0075	0240	31844		2544	14569	0244	00085	2548

C-REF-NO 004	YR 1963	DEPTH 86	WAVES 1 19X0	AIR T 11.9	VIS 4
CONS. NO 085	MONTH 8	MXSAMPD 01	WAVES 2 1933	WET B 11.7	STN
LAT 51-222N	DAY 09	NO.DPTH 8	WND-DIR 190	WW-CODE 40	
LON 56-432W	HR 05.6	W-COLOR 30	WND-SPD 03	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.1	CLD-AMT 9	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
058	0000	073 B	30003		2348	14737
058	0010	0757	30923		2416	14761
058	0013	0796	31273		2438	14781
058	0020	0756	31360		2450	14768
058	0030	0513	31664		2504	14676
058	0050	0255	31792		2539	14571
058	0075	0244	31848		2544	14571
058	0081	0242 C	31853		2545	14571

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0730 B	30003		2348	14737	0000	00000	4420
0010	0757	30923		2416	14761	0041	00002	3768
0020	0756	31360		2450	14768	0077	00007	3442
0030	0513	31664		2504	14676	0109	00015	2928
0050	0255	31792		2539	14571	0165	00038	2599
0075	0244	31848		2544	14571	0230	00079	2548

C-REF-NO 004	YR 1963	DEPTH 66	WAVES 1 20X0	AIR T 12.4	VIS 5
CONS. NO 086	MONTH 8	MXSAMPD 01	WAVES 2 2033	WET B 12.3	STN
LAT 51-216N	DAY 09	NO.DPTH 7	WND-DIR 200	WW-CODE 20	
LON 56-423W	HR 06.1	W-COLOR 30	WND-SPD 03	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 9	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
062	0000	075 B	30095		2352	14746
062	0010	0812	31095		2422	14785
062	0013	0820	31211		2430	14790
062	0020	0810	31397		2446	14790
062	0030	0449	31826		2524	14651
062	0050	0348	31854		2536	14612
062	0059	0320	31856		2539	14602

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0750 B	30095		2352	14746	0000	00000	4376
0010	0812	31095		2422	14785	0041	00002	3713
0020	0810	31397		2446	14790	0077	00007	3486
0030	0649	31826		2524	14651	0108	00015	2741
0050	0348	31854		2536	14612	0162	00037	2627

C-REF-NO 004	YR 1963	DEPTH 19	WAVES 1 20X0	AIR T 14.8	VIS 5
CONS. NO 087	MONTH 8	MXSAMPD 00	WAVES 2 2033	WET B 14.5	STN
LAT 51-210N	DAY 09	NO.DPTH 3	WND-DIR 200	WW-CODE 20	
LON 56-416W	HR 06.5	W-COLOR 30	WND-SPD 03	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.4	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
066	0000	076 B	31353		2449	14766
066	0010	0989	31330		2413	14855
066	0015	0987	31335		2414	14855

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0760 B	31353		2449	14766	0000	00000	3449
0010	0989	31330		2413	14855	0036	00002	3796

C-REF-NO 004	YR 1963	DEPTH 40	WAVES 1 00X0	AIR T 13.7	VIS 0
CONS. NO 088	MONTH 8	MXSAMPD 30	WAVES 2 00X0	WET B 13.5	STN
LAT 51-467N	DAY 09	NO.DPTH 5	WND-DIR CALM	WW-CODE 49	
LON 56-128W	HR 10.4	W-COLOR 40	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1610	W-TRNSP	BARO 1009.1	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
106	0000	072 B	28964		2267	14720
106	0010	0396	30379		2415	14606
106	0020	0216 C	31171		2492	14541
106	0030	0068	31819		2553	14485
106	0035	0054	31888		2559	14480

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0720 B	28964		2267	14720	0000	00000	5185
0010	0396	30379		2415	14606	0045	00002	3781
0020	0216 C	31171		2492	14541	0079	00007	3041
0030	0068	31819		2553	14485	0107	00014	2460

C-REF-NO 004	YR 1963	DEPTH 50	WAVES 1 00X0	AIR T 11.4	VIS 0
CONS. NO 089	MONTH 8	MXSAMPD 00	WAVES 2 00X0	WET B 11.3	STN
LAT 51-461N	DAY 09	NO.DPTH 5	WND-DIR CALM	WW-CODE 49	
LON 56-121W	HR 10.7	W-COLOR 40	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
108	0000	054 B				
108	0010	0346	29671		2363	14576
108	0020	0267	30142		2406	14549
108	0030	0135	30992		2483	14504
108	0045	-0015	31561		2536	14446

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0540 B	2901 I		2292	14647	0000	00000	4948
0010	0346	29671		2363	14575	0046	00002	4275
0020	0267	30142		2406	14549	0087	00008	3858
0030	0135	30992		2483	14504	0122	00017	3126

C-REF-NO 004	YR 1963	DEPTH	88	WAVES 1 00X0	AIR T 10.8	410	1
CONS. NO 090	MONTH 8	MXSAMPD	01	WAVES 2 49X1	WET B 10.8	515	
LAT 51-448N	DAY 09	NO.DPTH	6	WND-DIR CALM	WW-CODE 49		
LON 56-104W	HR 11.0	W-COLOR	40	WND-SPD 00	CLD-TPE X		
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1009.1	CLD-AMT 9	HW	78

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
112	0000	064 B	29301		2304	14692
112	0010	0493	29864		2364	14640
112	0020	0244	31137		2487	14553
112	0030	0095	31720		2544	14496
112	0050	-0041	32280		2595	14444
112	0075	-0074	32404		2606	14435

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0640 B	29301		2304	14692	0000	00000	4839
0010	0493	29864		2364	14640	0046	00002	4260
0020	0244	31137		2487	14552	0083	00008	3087
0030	0095	31720		2544	14496	0111	00015	2549
0050	-0041	32280		2595	14444	0157	00033	2058
0075	-0074	32404		2606	14435	0208	00065	1950

C-REF-NO 004	YR 1963	DEPTH 88	WAVES 1 49X0	AIR T 11.6	VIS 1
CONS. NO 091	MONTH 8	MXSAMPD 01	WAVES 2 18X1	WET B 11.6	STN
LAT 51-442N	DAY 09	NO.DPTH 6	WND-DIR 150	WW-CODE 53	
LON 56-098W	HR 11.5	W-COLOR 40	WND-SPD 01	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 9	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
117	0000	064 B	29254		2300	14691
117	0010	0493	30117		2384	14644
117	0020	0492	30529		2417	14651
117	0030	0250 C	31571		2522	14563
117	0050	0016	32071		2576	14468
117	0075	-0061	32371		2603	14441

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0640 B	29254		2300	14691	0000	00000	4874
0010	0493	30117		2384	14644	0045	00002	4070
0020	0492	30529		2417	14651	0084	00008	3759
0030	0250 C	31571		2522	14563	0117	00016	2762
0050	0016	32071		2576	14468	0167	00036	2242
0075	-0061	32371		2603	14441	0220	00070	1980

C-REF-NO 004	YR 1963	DEPTH	83	WAVES 1 49X1	AIR T 13.2	VIS 3
CONS. NO 092	MONTH 8	MXSAMPD	01	WAVES 2 20X2	WET B 13.1	STN
LAT 51-423N	DAY 09	NO.DPTH	6	WND-DIR 100	WW-CGDE 47	
LON 56-073W	HR 12.0	W-COLOR	40	WND-SPD 04	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1009.1	CLD-AMT 9	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
122	0000	078 B	30260		2361	14760
122	0010	0711	30416		2382	14736
122	0020	0451	31003		2459	14640
122	0030	0016	32039		2573	14464
122	0050	-0055	32331		2600	14439
122	0075	-0092	32473		2613	14427

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0780 B	30260		2361	14760	0000	00000	4292
0010	0711	30416		2382	14736	0042	00002	4388
0020	0451	31003		2459	14640	0080	00008	3362
0030	0016	32039		2573	14464	0108	00015	2267
0050	-0055	32331		2600	14439	0151	00032	2014
0075	-0092	32473		2613	14427	0200	00063	1891

C-REF-NO 004	YR 1963	DEPTH	84	WAVES 1 49X0	AIR T 12.1	VIS 3
CONS. NO 093	MONTH 8	MXSAMPD	01	WAVES 2 20X2	WET B 12.0	STN
LAT 51-403N	DAY 09	NO.DPTH	6	WND-DIR 250	WW-CODE 45	
LON 56-048W	HR 12.9	W-COLOR	40	WND-SPD 03	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1009.8	CLD-AMT 9	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
130	0000	076 B	29955		2340	14748
130	0010	0702	30212		2368	14730
130	0020	0286	31354		2501	14574
130	0030	-0069	32394		2606	14430
130	0050	-0096	32553		2619	14423
130	0075	-0102	32553		2619	14424

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0760 B	29955		2340	14748	0000	00000	4494
0010	0702	30212		2368	14730	0044	00002	4230
0020	0286	31354		2501	14574	0080	00007	2953
0030	-0069	32394		2606	14430	0105	00013	1962
0050	-0096	32553		2619	14423	0143	00029	1830
0075	-0102	32553		2619	14424	0189	00058	1826

REF-NO 004	YR 1963	DEPTH	64	WAVES 1 20X0	AIR T 12.0	VIS 3
NO. 094	MONTH 8	MXSAMPD	01	WAVES 2 20X2	WET B 11.8	STN
LAT 51-383N	DAY 09	NO.DPTH	6	WND-DIR 230	WW-CODE 45	
ION 56-024W	HR 13.3	W-COLOR	40	WND-SPD 02	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1010.5	CLD-AMT 9	HW 11

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
135	0000	078 B	30207		2357	14759
135	0010	0527	30619		2420	14665
135	0020	0213	31500		2519	14544
135	0030	0140	31825		2550	14517
135	0050	-0035	32484		2611	14450
135	0059	-0038	32489		2612	14450

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	PQT.EN	SVA
0000	0780 B	30207		2357	14759	0000	00000	4331
0010	0527	30619		2420	14665	0040	00002	3726
0020	0213	31500		2519	14544	0073	00007	2789
0030	0140	31825		2550	14517	0100	00013	2495
0050	-0035	32484		2611	14450	0144	00031	1904

C-REF-NO 004	YR 1963	DEPTH 66	WAVES 1 49X0	AIR T 11.0	VIS 3
CONS. NO 095	MONTH 8	MXSAMPD 01	WAVES 2 20X1	WET B 10.8	STN
LAT 51-381N	DAY 09	NO.DPTH 6	WND-DIR 270	WW-CODE 45	
LON 56-020W	HR 13.7	W-COLOR 40	WND-SPD 02	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1010.5	CLD-AMT 9	HW 11

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
138	0000	077 B	30231		2360	14756
138	0010	0555	30621		2417	14676
138	0020	0249	31395		2508	14558
138	0030	0299	31678		2526	14585
138	0050	0002	32431		2606	14466
138	0060	-0006	32454		2608	14465

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0770 B	30231		2360	14756	0000	00000	4300
0010	0555	30621		2417	14676	0040	00002	3754
0020	0249	31395		2508	14558	0074	00007	2894
0030	0299	31678		2526	14585	0102	00014	2719
0050	0002	32431		2606	14466	0149	00033	1960

C-REF-NO 004	YR 1963	DEPTH 45	WAVES 1 49X0	AIR T 13.0	VIS 4
CONS. NO 096	MONTH 8	MXSAMPD 00	WAVES 2 23X1	WET B 12.6	STN
LAT 51-366N	DAY 09	NO.DPTH 5	WND-DIR 270	WW-CODE 42	
LON 56-002W	HR 14.3	W-COLOR 40	WND-SPD 03	CLD-TPE 8	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1010.5	CLD-AMT 8	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
143	0000	072 B	29940		2344	14732
143	0010	0794	31200		2433	14779
143	0020	0718	31463		2464	14754
143	0030	0449	31877		2528	14652
143	0040	0279	32125		2563	14585

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0720 B	29940		2344	14732	0000	00000	4455
0010	0794	31200		2433	14779	0041	00002	3610
0020	0718	31463		2464	14754	0075	00007	3316
0030	0449	31877		2528	14652	0106	00015	2702

C-REF-NO 004	YR 1963	DEPTH 30	WAVES 1 23X1	AIR T 12.3	VIS 3
CONS. NO 097	MONTH 8	MXSAMPD 00	WAVES 2 23X1	WET B 12.0	STN
LAT 51-361N	DAY 09	NO.DPTH 4	WND-DIR 270	WW-CODE 51	
LON 55-596W	HR 14.6	W-COLOR 40	WND-SPD 04	CLD-TPE 8	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1010.5	CLD-AMT 8	HW 12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
147	0000	074 B	30321		2371	14745
147	0010	0727	30967		2424	14750
147	0020	0705	31071		2435	14744
147	0025	0638	31354		2465	14722

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0740 B	30321		2371	14745	0000	00000	4195
0010	0727	30967		2424	14750	0040	00002	3696
0020	0705	31071		2435	14744	0076	00008	3592

C-REF-NO 004	YR 1963	DEPTH 50	WAVES 1 00X0	AIR T 12.2	VIS 1
CONS. NO 098	MONTH 9	MXSAMPD 00	WAVES 2 23X1	WET B 10.1	STN
LAT 51-278N	DAY 10	NO.DPTH 5	WND-DIR CALM	WW-CODE 41	
LON 56-502W	HR 23.1	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.2	CLD-AMT 9	HW 37

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
233	0000	072 B	30524		2390	14740
233	0010	0618	30782		2423	14704
233	0020	0574	30720		2423	14687
233	0030	0528	30952		2446	14673
233	0045	0470	31111		2465	14653

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0720 B	30524		2390	14740	0000	00000	4018
0010	0618	30782		2423	14704	0039	00002	3703
0020	0574	30720		2423	14687	0076	00008	3701
0030	0528	30952		2446	14673	0112	00017	3478

C-REF-NO 004	YR 1963	DEPTH 96	WAVES 1 00X0	AIR T 09.2	VIS 1
CONS. NO 099	MONTH 9	MXSAMPD 01	WAVES 2 23X1	WET B 09.2	STN
LAT 51-275N	DAY 10	NO.DPTH 8	WND-DIR CALM	WW-CODE 42	
LON 56-498W	HR 23.6	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.2	CLD-AMT 9	HW 43

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
238	0000	067 B	30468		2392	14719
238	0010	0568	30590		2413	14681
238	0013	0548	30634		2419	14674
238	0020	0529	30792		2434	14669
238	0030	0516	30891		2443	14667
238	0050	0313	31507		2511	14593
238	0075	0244	31648		2528	14568
238	0085	0221	31703		2534	14561

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0670 B	30468		2392	14719	0000	00000	3998
0010	0568	30590		2413	14681	0039	00002	3792
0020	0529	30792		2434	14669	0076	00008	3599
0030	0516	30891		2443	14667	0112	00017	3512
0050	0313	31507		2511	14593	0176	00042	2860
0075	0244	31648		2528	14568	0246	00087	2700

C-REF-NO 004	YR 1963	DEPTH 104	WAVES 1 07X0	AIR T 08.5	VIS 3
CONS. NO 100	MONTH 9	01	WAVES 2 23X1	WET B 07.6	STN
LAT 51-271N	DAY 11	8	WND-DIR 070	WW-CODE 42	
LON 56-492W	HR 00.2	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.9	CLD-AMT 9	HW 50

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
003	0000	066 B	30500		2395	14716
003	0010	0546 B	30647		2420	14673
003	0013	0555	30620		2417	14677
003	0020	0515	30831		2438	14664
003	0030	0438	31058		2464	14637
003	0050	0346	31277		2490	14604
003	0075	0230	31664		2530	14563
003	0095	0196	31781		2542	14552

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0660 B	30500		2395	14716	0000	00000	3963
0010	0546 B	30647		2420	14673	0039	00002	3725
0020	0515	30831		2438	14664	0075	00007	3555
0030	0438	31058		2464	14637	0110	00016	3308
0050	0346	31277		2490	14604	0174	00042	3061
0075	0230	31664		2530	14563	0246	00088	2677

C-REF-NO 004	YR 1963	DEPTH 86	WAVES 1 07X1	AIR T 07.0	VIS 3
CONS. NO 101	MONTH 9	MXSAMPD 01	WAVES 2 23X1	WET B 06.8	STN
LAT 51-266N	DAY 11	NO.DPTH 6	WND-DIR 070	WW-CODE 02	
LON 56-486W	HR 00.7	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 997.6	CLD-AMT 9	HW 60

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
008	0000	066 B	30611		2404	14717
008	0010	0584	30657		2417	14689
008	0020	0536	30729		2428	14671
008	0030	0446	30985		2458	14639
008	0050	0344	31406		2501	14605
008	0075	0239	31723		2535	14567

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0660 B	30611		2404	14717	0000	00000	3879
0010	0584	30657		2417	14689	0038	00002	3759
0020	0536	30729		2428	14671	0076	00008	3654
0030	0446	30985		2458	14639	0111	00017	3371
0050	0344	31406		2501	14605	0175	00042	2962
0075	0239	31723		2535	14567	0245	00087	2639

C-REF-NO 004	YR 1963	DEPTH	64	WAVES 1 07X4	AIR T 07.8	VIS 4
CONS. NO 102	MONTH 9	MXSAMPD	00	WAVES 2 23X1	WET B 07.0	STN
LAT 51-252N	DAY 11	NO.DPTH	5	WND-DIR 070	WW-CODE 02	
LON 56-469W	HR 01.1	W-COLOR		WND-SPD 10	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 996.9	CLD-AMT 9	HW 62

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
012	0000	084 B	30882		2401	14791
012	0010	0800	30903		2409	14778
012	0020	0594	31070		2448	14700
012	0030	0504	31259		2473	14667
012	0050	0391	31410		2497	14625

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0840 B	30882		2401	14791	0000	00000	3909
0010	0800	30903		2409	14778	0039	00002	3840
0020	0594	31070		2448	14700	0076	00008	3461
0030	0504	31259		2473	14667	0109	00016	3223
0050	0391	31410		2497	14625	0172	00041	3000

C-REF-NO 004	YR 1963	DEPTH 82	WAVES 1 07X5	AIR T 07.5	VIS 4
CONS. NO 103	MONTH 9	MXSAMPD 01	WAVES 2 23X1	WET B 07.3	STN
LAT 51-239N	DAY 11	NO.DPTH 6	WND-DIR 070	WW-CODE 02	
LON 56-453W	HR 01.7	W-COLOR	WND-SPD 11	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.2	CLD-AMT 8	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
018	0000	113 B	30648		2336	14895
018	0010	1128	30668		2338	14897
018	0020	1080	30892		2364	14884
018	0030	1040	30964		2376	14872
018	0050	0456	31430		2492	14652
018	0075	0404	31560		2507	14636

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1130 B	30648		2336	14895	0000	00000	4527
0010	1128	30668		2338	14897	0045	00002	4510
0020	1080	30892		2364	14884	0039	00009	4267
0030	1040	30964		2376	14872	0132	00020	4151
0050	0456	31430		2492	14652	0204	00048	3047
0075	0404	31560		2507	14636	0279	00096	2900

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 07X5	AIR T 08.0	VIS 6
CONS. NO 104	MONTH 9	MXSAMPD 01	WAVES 2 2321	WET B 07.2	STN
LAT 51-226N	DAY 11	NO.DPTH 7	WND-DIR 070	WW-CODE 02	
LON 56-436W	HR 02.2	W-COLOR	WND-SPD 13	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.2	CLD-AMT 9	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
023	0000	119 B	30755		2334	14918
023	0010	1213	30747		2329	14927
023	0020	1209	30747		2330	14928
023	0030	1189	33808		2570	14961
023	0050	0590	31475		2481	14708
023	0075	0503	31559		2497	14678
023	0090	0494	31567		2499	14677

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1190 B	30755		2334	14918	0000	00000	4550
0010	1213	30747		2329	14927	0046	00002	4598
0020	1209	30747		2330	14928	0092	00009	4593
0030	1189	33808		2570	14961	0127	00018	2304
0050	0590	31475		2481	14708	0182	00041	3155
0075	0503	31559		2497	14678	0259	00090	2999

C-REF-NO 004	YR 1963	DEPTH 92	WAVES 1 07X5	AIR T 08.0	VIS 8
CONS. NO 105	MONTH 9	MXSAMPD 01	WAVES 2 23X1	WET B 07.0	STN
LAT 51-221N	DAY 11	NO.DPTH 8	WND-DIR 070	WW-CODE 02	
LON 56-431W	HR 02.7	W-COLOR	WND-SPD 10	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 996.9	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
028	0000	118 B	30746		2335	14914
028	0010	1199	30753		2332	14923
028	0013	1197	30750		2332	14922
028	0020	1196	30755		2333	14923
028	0030	1137	30918		2356	14906
028	0050	0740	31284		2447	14766
028	0075	0503	31532		2495	14677
028	0085	0504	31563		2497	14680

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1180 B	30746		2335	14914	0000	00000	4539
0010	1199	30753		2332	14923	0046	00002	4569
0020	1196	30755		2333	14923	0092	00009	4564
0030	1137	30918		2356	14906	0136	00021	4344
0050	0740	31284		2447	14766	0215	00052	3481
0075	0503	31532		2495	14677	0297	00104	3020

C-REF-NO 004	YR 1963	DEPTH	80	WAVES 1 07X5	AIR T 07.5	VIS 8
CONS. NO 106	MONTH 9	MXSAMPD	01	WAVES 2 23X1	WET B 06.8	STN
LAT 51-216N	DAY 11	NO.DPTH	7	WND-DIR 070	WW-CODE 02	
LON 56-423W	HR 03.1	W-COLOR		WND-SPD 10	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 996.9	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
032	0000	121 B	30814		2335	14926
032	0010	1228	30815		2332	14934
032	0013	1226	30815		2332	14933
032	0020	1214 B	30820		2335	14930
032	0030	1082	30927		2366	14887
032	0050	0794	31247		2436	14786
032	0075	0518	31537		2494	14684

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1210 B	30814		2335	14926	0000	00000	4541
0010	1228	30815		2332	14934	0046	00002	4574
0020	1214 B	30820		2335	14930	0092	00009	4548
0030	1082	30927		2366	14887	0136	00021	4246
0050	0794	31247		2436	14786	0214	00052	3580
0075	0518	31537		2494	14684	0297	00104	3032

C-REF-NO 004	YR 1963	DEPTH 17	WAVES 1 07X5	AIR T 08.0	VIS 18
CONS. NO 107	MONTH 9	MXSAMPD 00	WAVES 2 23X1	WET B 06.8	STN
LAT 51-210N	DAY 11	NO.DPTH 2	WND-DIR 070	WW-CODE 02	
LON 56-416W	HR 03.5	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 997.6	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
036	0000	119 B	30813		2338	14919
036	0010	1201	30824		2337	14924

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1190 B	30813		2338	14919	0000	00000	4507
0010	1201	30824		2337	14924	0045	00002	4520

C-REF-NO 004	YR 1963	DEPTH 36	WAVES 1 36X3	AIR T 07.0	VIS 6
CONS. NO 108	MONTH 9	MXSAMPD 00	WAVES 2 36X2	WET B 06.4	STN
LAT 51-361N	DAY 11	NO.DPTH 4	WND-DIR 360	WW-CODE 25	
LON 55-596W	HR 08.3	W-COLOR	WND-SPD 12	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 998.6	CLD-AMT 9	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
084	0000	110 B	30837		2356	14887
084	0010	1100	30797		2353	14888
084	0020	0922	31051		2402	14828
084	0030	0682	31312		2456	14740

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	30837		2356	14887	0000	00000	4337
0010	1100	30797		2353	14888	0044	00002	4368
0020	0922	31051		2402	14828	0085	00009	3903
0030	0682	31312		2456	14740	0122	00018	3384

C-REF-NO 004	YR 1963	DEPTH 50	WAVES 1 36X3	AIR T 06.3	VIS 6
CONS. NO 109	MONTH 9	MXSAMPD 00	WAVES 2 36X2	WET B 05.4	STN
LAT 51-367N	DAY 11	NO.DPTH 5	WND-DIR 360	WW-CODE 25	
LON 56-002W	HR 08.7	W-COLOR	WND-SPD 11	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 998.6	CLD-AMT 9	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
088	0000	110 B	30846		2357	14887
088	0010	1111	30835		2354	14893
088	0020	1107	30840		2355	14893
088	0030	0780	31032		2421	14775
088	0045	0248	31952		2552	14569

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	30846		2357	14887	0000	00000	4330
0010	1111	30835		2354	14893	0044	00002	4358
0020	1107	30840		2355	14893	0087	00009	4350
0030	0780	31032		2421	14775	0128	00019	3719

C-REF-NO 004	YR 1963	DEPTH 72	WAVES 1 36X3	AIR T 05.3	VIS 6
CONS. NO 110	MONTH 9	MXSAMPD 01	WAVES 2 36X2	WET B 05.0	STN
LAT 51-381N	DAY 11	NO.DPTH 6	WND-DIR 360	NW-CODE 16	
LON 56-020W	HR 09.2	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 998.9	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
094	0000	109 B	30868		2360	14884
094	0010	1098	30886		2360	14889
094	0020	1046 B	30921		2372	14872
094	0030	0703 C	31173		2443	14746
094	0050	0022	32236		2589	14473
094	0067	-0045	32420		2607	14447

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1090 B	30868		2360	14884	0000	00000	4297
0010	1098	30886		2360	14889	0043	00002	4299
0020	1046 B	30921		2372	14872	0086	00009	4190
0030	0703 C	31173		2443	14746	0125	00018	3514
0050	0022	32236		2589	14473	0181	00040	2118

C-REF-NO 004	YR 1963	DEPTH 76	WAVES 1 36X3	AIR T 05.4	VIS 6
CONS. NO 111	MONTH 9	MXSAMPD 01	WAVES 2 36X2	WET B 05.0	STN
LAT 51-383N	DAY 11	NO.DPTH 6	WND-DIR 360	WW-CODE 16	
LON 56-024W	HR 09.6	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 998.9	CLD-AMT 9	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
097	0000	109 B	30886		2362	14884
097	0010	1093	30866		2360	14887
097	0020	1083	30869		2362	14885
097	0030	0719	31165		2440	14753
097	0050	0028	32143		2581	14474
097	0070	-0050	32456		2610	14446

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1090 B	30886		2362	14884	0000	00000	4284
0010	1093	30866		2360	14887	0043	00002	4306
0020	1083	30869		2362	14885	0086	00009	4289
0030	0719	31165		2440	14753	0126	00019	3541
0050	0028	32143		2581	14474	0183	00041	2192

C-REF-NO 004	YR 1963	DEPTH	88	WAVES 1 01X2	AIR T 06.0	VIS 6
CONS. NO 112	MONTH 9	MXSAMPD	01	WAVES 2 36X2	WET B 05.3	STN
LAT 51-403N	DAY 11	NO.DPTH	7	WND-DIR 010	WW-CODE 80	
LON 56-048W	HR 10.1	W-COLOR	20	WND-SPD 07	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 999.6	CLD-AMT 9	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
103	0000	102 B	30901		2375	14859
103	0010	0973	30909		2383	14843
103	0020	0924	30906		2390	14827
103	0030	0326	31340		2497	14593
103	0050	0020 B	32123		2580	14470
103	0075	-0086	32535		2617	14431
103	0083	-0087	32546		2618	14432

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1020 B	30901		2375	14859	0000	00000	4161
0010	0973	30909		2383	14843	0041	00002	4084
0020	0924	30906		2390	14827	0082	00008	4014
0030	0326	31340		2497	14593	0117	00017	2996
0050	0020 B	32123		2580	14470	0170	00038	2204
0075	-0086	32535		2617	14431	0221	00070	1845

C-REF-NO 004	YR 1963	DEPTH 84	WAVES 1 01X2	AIR T 05.5	VIS 6
CONS. NO 113	MONTH 9	MXSAMPD 01	WAVES 2 01X3	WET B 04.8	STN
LAT 51-423N	DAY 11	NO.DPTH 7	WND-DIR 010	WW-CODE 15	
LON 56-073W	HR 10.7	W-COLOR 20	WND-SPD 07	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1000.3	CLD-AMT 9	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
108	0000	072 B	30039		2352	14733
108	0010	0777	30160		2354	14759
108	0020	0538	31020		2451	14676
108	0030	0261	31586		2522	14568
108	0050	-0025	32176		2586	14450
108	0075	-0077	32480		2613	14435
108	0080	-0078	32472		2612	14435

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0720 B	30039		2352	14733	0000	00000	4380
0010	0777	30160		2354	14759	0044	00002	4364
0020	0538	31020		2451	14676	0083	00008	3437
0030	0261	31586		2522	14568	0114	00016	2759
0050	-0025	32176		2586	14450	0164	00035	2144
0075	-0077	32480		2613	14435	0214	00068	1890

C-REF-NO 004	YR 1963	DEPTH 70	WAVES 1 01X2	AIR T 06.0	VIS 8
CONS. NO 114	MONTH 9	MXSAMPD 01	WAVES 2 01X3	WET B 04.8	STN
LAT 51-442N	DAY 11	NO.DPTH 6	WND-DIR 010	WW-CODE 15	
LON 56-098W	HR 11.1	W-COLOR 20	WND-SPD 05	CLD-TPE 5	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1001.0	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
112	0000	070 B	29934		2346	14724
112	0010	0696	29927		2346	14724
112	0020	0694	29929		2346	14725
112	0030	0364 I	31085		2473	14606
112	0050	0032	32122		2579	14476
112	0065	-0030	32285		2595	14452

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0700 B	29934		2346	14724	0000	00000	4434
0010	0696	29927		2346	14724	0045	00002	4436
0020	0694	29929		2346	14725	0089	00009	4433
0030	0364 I	31085		2473	14605	0128	00019	3221
0050	0032	32122		2579	14476	0182	00040	2210

C-REF-NO 004	YR 1963	DEPTH 108	WAVES 1 01X2	AIR T 05.8	VIS 8
CONS. NO 115	MONTH 9	MXSAMPD 01	WAVES 2 01X3	WET B 04.8	STN
LAT 51-447N	DAY 11	NO.DPTH 8	WND-DIR 020	WW-CODE 15	
LON 56-104W	HR 11.4	W-COLOR 20	WND-SPD 06	CLD-TPE 5	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1001.0	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
116	0000	070 B	29961		2348	14725
116	0010	0700	29948		2347	14726
116	0020	0698	29967		2349	14727
116	0030	0263	31486		2514	14567
116	0050	0015	32160		2583	14469
116	0075	-0053	32364		2603	14444
116	0097	-0072	32436		2609	14440
116	0100	-0074	32433		2609	14439

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0700 B	29961		2348	14725	0000	00000	4414
0010	0700	29948		2347	14726	0044	00002	4425
0020	0698	29967		2349	14727	0089	00009	4409
0030	0263	31486		2514	14567	0125	00018	2836
0050	0015	32160		2583	14469	0176	00038	2173
0075	-0053	32364		2603	14444	0228	00071	1988
0100	-0074	32433		2609	14439	0277	00115	1926

C-REF-NO 004	YR 1963	DEPTH 48	WAVES 1 01X2	AIR T 05.6	VIS 6
CONS. NO 116	MONTH 9	MXSAMPD 00	WAVES 2 01X2	WET B 05.1	STN
LAT 51-461N	DAY 11	NO.DPTH 5	WND-DIR 020	WW-CODE 80	
LON 56-121W	HR 12.0	W-COLOR 20	WND-SPD 06	CLD-TPE 5	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1001.6	CLD-AMT 9	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
121	0000	070 B	29927		2345	14724
121	0010	0699	29957		2348	14726
121	0020	0680	30046		2357	14721
121	0030	0160	30045		2406	14502
121	0041	0127	31725		2542	14512

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0700 B	29927		2345	14724	0000	00000	4440
0010	0699	29957		2348	14726	0044	00002	4417
0020	0680	30046		2357	14721	0088	00009	4328
0030	0160	30045		2406	14502	0130	00019	3862

C-REF-NO 004	YR 1963	DEPTH 40	WAVES 1 02X2	AIR T 05.7	VIS 6
CONS. NO 117	MONTH 9	MXSAMPD 00	WAVES 2 01X2	WET B 05.1	STN
LAT 51-467N	DAY 11	NO.DPTH 5	WND-DIR 020	WW-CODE 80	
LON 56-129W	HR 12.3	W-COLOR 20	WND-SPD 06	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1001.6	CLD-AMT 9	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
124	0000	069 B	29951		2349	14720
124	0010	0694	29960		2349	14724
124	0020	0680	30020		2355	14721
124	0030	0196	31595		2527	14539
124	0035	0170	31690		2537	14530

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0690 B	29951		2349	14720	0000	00000	4410
0010	0694	29960		2349	14724	0044	00002	4409
0020	0680	30020		2355	14721	0088	00009	4348
0030	0196	31595		2527	14539	0124	00018	2706

C-REF-NO 004	YR 1963	DEPTH	64	WAVES 1 2222	AIR T 10.2	VIS	B
CONS. NO 118	MONTH 9	MXSAMPD	01	WAVES 2 2221	WET B 07.7	STN	
LAT 51-205N	DAY 11	NO.DPTH	6	WND-DIR 220	WW-CODE 01		
LON 57-405W	HR 20.4	W-COLOR		WND-SPD 07	CLD-TPE 8		
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1007.4	CLD-AMT 8	HW	12

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
206	0000	100 B	30420		2341	14845
206	0010	0975	30504		2351	14839
206	0020	0765	30895		2413	14766
206	0030	0691	31056		2435	14740
206	0050	0472	31468		2493	14660
206	0060	0438	31512		2500	14648

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1000 B	30420		2341	14845	0000	00000	4486
0010	0975	30504		2351	14839	0045	00002	4387
0020	0765	30895		2413	14766	0086	00008	3800
0030	0691	31056		2435	14740	0123	00018	3587
0050	0472	31468		2493	14660	0189	00045	3034

C-REF-NO 004	YR 1963	DEPTH	96	WAVES 1 2222	AIR T 10.0	VIS	B
CONS. NO 119	MONTH 9	MXSAMPD	01	WAVES 2 2222	WET B 07.7	STN	
LAT 51-196N	DAY 11	NO.DPTH	7	WND-DIR 270	WW-CODE 01		
LON 57-390W	HR 20.8	W-COLOR		WND-SPD 04	CLD-TPE 8		
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1007.1	CLD-AMT 2	HW	00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
210	0000	103 B	30378		2332	14856
210	0010	0974	30462		2348	14838
210	0020	0720	31067		2432	14750
210	0030	0574	31343		2472	14697
210	0050	0424	31485		2499	14640
210	0075	0401	31562		2508	14635
210	0090	0342	31689		2523	14614

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1030 B	30378		2332	14856	0000	00000	4564
0010	0974	30462		2348	14838	0045	00002	4417
0020	0720	31067		2432	14750	0085	00008	3614
0030	0574	31343		2472	14697	0120	00017	3235
0050	0424	31485		2499	14640	0182	00042	2974
0075	0401	31562		2508	14635	0256	00089	2896

C-REF-NO 004	YR 1963	DEPTH 124	WAVES 1 2722	AIR T 10.6	VIS 8
CONS. NO 120	MONTH 9	MXSAMPD 01	WAVES 2 2222	WET B 08.1	STN
LAT 51-183N	DAY 11	NO.DPTH 8	WND-DIR 270	WW-CODE 03	
LON 57-367W	HR 21.4	W-COLOR	WND-SPD 05	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.1	CLD-AMT 5	HW 00

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
215	0000	102 B	30300		2328	14851
215	0010		30433		2351	14825
215	0020	0816 B	31099		2422	14788
215	0030	0604	31352		2469	14709
215	0050	0458	31491		2497	14654
215	0075	0340	31707		2525	14611
215	0100	0172	32052		2566	14546
215	0115	0030	32407		2602	14490

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1020 B	30300		2328	14851	0000	00000	4606
0010		30433		2351	14825	0045	00002	4388
0020	0816 B	31099		2422	14788	0086	00008	3717
0030	0604	31352		2469	14709	0121	00017	3262
0050	0458	31491		2497	14654	0184	00043	3003
0075	0340	31707		2525	14611	0256	00088	2732
0100	0172	32052		2566	14546	0320	00145	2343

C-REF-NO 004	YR 1963	DEPTH 108	WAVES 1 2522	AIR T 11.0	VIS 8
CONS. NO 121	MONTH 9	MXSAMPD 01	WAVES 2 2322	WET B 08.0	STN
LAT 51-157N	DAY 11	NO.DPTH 7	WND-DIR 270	WW-CODE 03	
LON 57-321W	HR 22.1	W-COLOR	WND-SPD 05	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 7	HW 01

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
222	0000	122 B	30560		2313	14926
222	0010	1231	30572		2312	14932
222	0020	1254	30793		2325	14944
222	0030	0954	30700		2370	14837
222	0050	0523	31506		2491	14681
222	0075	0262	31919		2548	14580
222	0100	-0040	32553		2617	14457

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1220 B	30560		2313	14926	0000	00000	4746
0010	1231	30572		2312	14932	0048	00002	4759
0020	1254	30793		2325	14944	0095	00010	4639
0030	0954	30700		2370	14837	0139	00021	4213
0050	0523	31506		2491	14681	0212	00050	3058
0075	0262	31919		2548	14580	0282	00094	2508
0100	-0040	32553		2617	14457	0337	00142	1847

C-REF-NO 004	YR 1963	DEPTH 139	WAVES 1 2522	AIR T 11.8	VIS 8
CONS. NO 122	MONTH 9	MXSAMPD 01	WAVES 2 2322	WET B 08.9	STN
LAT 51-127N	DAY 11	NO.DPTH 9	WND-DIR 250	WW-CODE 03	
LON 57-267W	HR 22.7	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 7	HW 02

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
229	0000	122 B	30626		2318	14927
229	0010	1221	30626		2318	14929
229	0020	1220 B	30621		2318	14930
229	0030	1195	30620		2323	14923
229	0050	0540	31444		2484	14687
229	0075	0242	31889		2548	14571
229	0100	0046	32353		2597	14494
229	0125	-0056	32578		2620	14454
229	0130	-0074 B	32596		2622	14447

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1220 B	30626		2318	14927	0000	00000	4697
0010	1221	30626		2318	14929	0047	00002	4701
0020	1220 B	30621		2318	14930	0094	00010	4705
0030	1195	30620		2323	14923	0141	00022	4664
0050	0540	31444		2484	14687	0220	00052	3123
0075	0242	31889		2548	14571	0291	00097	2516
0100	0046	32353		2597	14494	0348	00147	2039
0125	-0056	32578		2620	14454	0396	00203	1820

C-REF-NO 004	YR 1963	DEPTH 94	WAVES 1 2522	AIR T 12.2	VIS 8
CONS. NO 123	MONTH 9	MXSAMPD 01	WAVES 2 2322	WET B 09.5	STN
LAT 51-097N	DAY 11	NO.DPTH 7	WND-DIR 250	WW-CODE 01	
LON 57-213W	HR 23.7	W-COLOR	WND-SPD 10	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 3	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
238	0000	123 B	30663		2319	14931
238	0010	1236	30666		2319	14934
238	0020	1235	30666		2319	14936
238	0030	1232	30669		2320	14936
238	0050	0714	31214		2445	14755
238	0075	0068	32327		2594	14499
238	0085	0017	32424		2604	14479

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1230 B	30663		2319	14931	0000	00000	4688
0010	1236	30666		2319	14934	0047	00002	4698
0020	1235	30666		2319	14936	0094	00010	4699
0030	1232	30669		2320	14936	0141	00022	4693
0050	0714	31214		2445	14755	0224	00054	3500
0075	0068	32327		2594	14499	0294	00097	2071

C-REF-NO 004	YR 1963	DEPTH 48	WAVES 1 2524	AIR T 12.0	VIS 8
CONS. NO 124	MONTH 9	MXSAMPD 00	WAVES 2 2323	WET B 08.9	STN
LAT 51-067N	DAY 12	NO.DPTH 5	WND-DIR 250	WW-CODE 01	
LON 57-161W	HR 00.4	W-COLOR	WND-SPD 08	CLD-TPE	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 0	HW 03

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
006	0000	120 B	30614		2321	14920
006	0010	1204	30606		2320	14923
006	0020	1202	30604		2320	14923
006	0030	1208	30627		2321	14927
006	0040	1115	30698		2343	14897

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1200 B	30614		2321	14920	0000	00000	4671
0010	1204	30606		2320	14923	0047	00002	4686
0020	1202	30604		2320	14923	0094	00010	4686
0030	1208	30627		2321	14927	0141	00022	4682

C-REF-NO 004	YR 1963	DEPTH 62	WAVES 1 2527	AIR T 12.2	VIS B
CONS. NO 125	MONTH 9	MXSAMPD 01	WAVES 2 2323	WET B 08.8	STN
LAT 51-036N	DAY 12	NO.DPTH 6	WND-DIR 250	WW-CODE 01	
LON 57-107W	HR 01.2	W-COLOR	WND-SPD 15	CLD-TPE	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 0	HW 04

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
013	0000	123 B	30712		2323	14931
013	0010	1232	30713		2323	14934
013	0020	1233	30708		2322	14936
013	0030	1226	30759		2328	14935
013	0050	0718	31285		2450	14757
013	0055	0517	31653		2503	14682

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1230 B	30712		2323	14931	0000	00000	4652
0010	1232	30713		2323	14934	0047	00002	4657
0020	1233	30708		2322	14936	0094	00010	4664
0030	1226	30759		2328	14935	0140	00021	4616
0050	0718	31285		2450	14757	0221	00053	3452

C-REF-NO 004 YR 1963 DEPTH 68 WAVES 1 2537 AIR T 12.0 VIS B
 CONS. NO 126 MONTH 9 MXSAMPD 01 WAVES 2 2333 WET B 09.0 STN
 LAT 51-027N DAY 12 NO.DPTH 6 WND-DIR 250 WW-CODE 03
 LON 57-088W HR 01.6 W-COLOR WND-SPD 13 CLD-TPE 3
 MARSD SQ 186 C/I 1810 W-TRNSP BARO 1009.1 CLD-AMT 3 HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
018	0000	121 B	30645		2322	14924
018	0010	1206	30610		2320	14923
018	0020	1205	30627		2321	14925
018	0030	1211	30637		2321	14929
018	0050	0635 E	31451		2473	14726
018	0060	0406	31874		2532	14639

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1210 B	30645		2322	14924	0000	00000	4666
0010	1206	30610		2320	14923	0047	00002	4687
0020	1205	30627		2321	14925	0094	00010	4674
0030	1211	30637		2321	14929	0141	00022	4679
0050	0635 E	31451		2473	14726	0220	00053	3226

C-REF-NO 004	YR 1963	DEPTH 76	WAVES 1 2537	AIR T 12.0	VIS 8
CONS. NO 127	MONTH 9	MXSAMPD 01	WAVES 2 2333	WET B 09.1	STN
LAT 51-017N	DAY 12	NO.DPTH 6	WND-DIR 250	WW-CODE 03	
LON 57-073W	HR 02.1	W-COLOR	WND-SPD 13	CLD-TPE 3	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 2	HW 05

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
022	0000	120 B	30710		2329	14921
022	0010	1255	30688		2317	14941
022	0020	1253	30691		2317	14942
022	0030	1253	30689		2317	14944
022	0050	0530	31632		2500	14686
022	0065	0352	31934		2542	14618

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1200 B	30710		2329	14921	0000	00000	4600
0010	1255	30688		2317	14941	0047	00002	4716
0020	1253	30691		2317	14942	0094	00010	4712
0030	1253	30689		2317	14944	0141	00022	4716
0050	0530	31632		2500	14686	0219	00052	2971

C-REF-NO 004	YR 1963	DEPTH 16	WAVES 1 2422	AIR T 11.7	VIS 8
CONS. NO 128	MONTH 9	MXSAMPD 00	WAVES 2 2432	WET B 09.0	STN
LAT 51-210N	DAY 12	NO.DPTH 2	WND-DIR 240	WW-CODE 02	
LON 56-416W	HR 05.2	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.1	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
053	0000	111 B	30868		2357	14891
053	0010	1113	30857		2356	14894

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1110 B	30868		2357	14891	0000	00000	4330
0010	1113	30857		2356	14894	0044	00002	4345

C-REF-NO 004	YR 1963	DEPTH 76	WAVES 1 2422	AIR T 11.5	VIS 8
CONS. NO 129	MONTH 9	MXSAMPD 01	WAVES 2 2432	WET B 09.1	STN
LAT 51-216N	DAY 12	NO.DPTH 7	WND-DIR 240	WW-CODE 02	
LON 56-423W	HR 05.4	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.1	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
056	0000	111 B	30851		2356	14891
056	0010	1123	30853		2353	14897
056	0013	1120	30842		2353	14896
056	0020	1033	30966		2378	14868
056	0030	0622	31434		2474	14717
056	0050	0373	31729		2524	14621
056	0070	0306	31813		2536	14597

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1110 B	30851		2356	14891	0000	00000	4343
0010	1123	30853		2353	14897	0044	00002	4365
0020	1033	30966		2378	14868	0086	00009	4136
0030	0622	31434		2474	14717	0123	00018	3221
0050	0373	31729		2524	14621	0183	00042	2743

C-REF-NO 004	YR 1963	DEPTH 92	WAVES 1 2423	AIR T 12.0	VIS 8
CONS. NO 130	MONTH 9	MXSAMPD 01	WAVES 2 2432	WET B 09.1	STN
LAT 51-221N	DAY 12	NO.DPTH 8	WND-DIR 240	WW-CODE 02	
LON 56-431W	HR 05.8	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.4	CLD-AMT 9	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
059	0000	112 B	30824		2352	14894
059	0010	1120	30794		2349	14895
059	0013	1110	30826		2354	14893
059	0020	1016 B	30970		2381	14862
059	0030	0847	31150		2421	14802
059	0050	0380	31716		2522	14624
059	0075	0223	31939		2553	14563
059	0087	0211	31959		2555	14560

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	30824		2352	14894	0000	00000	4380
0010	1120	30794		2349	14895	0044	00002	4404
0020	1016 B	30970		2381	14862	0087	00009	4107
0030	0847	31150		2421	14802	0126	00019	3723
0050	0380	31716		2522	14624	0191	00044	2760
0075	0223	31939		2553	14563	0257	00086	2464

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 2422	AIR T 12.0	VIS 8
CONS. NO 131	MONTH 9	MXSAMPD 01	WAVES 2 2432	WET B 09.1	STN
LAT 51-226N	DAY 12	NO.DPTH 7	WND-DIR 240	WW-CODE 02	
LON 56-436W	HR 06.2	W-COLOR	WND-SPD 10	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1006.4	CLD-AMT 9	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
063	0000	112 B	30833		2352	14894
063	0010	1121	30813		2351	14896
063	0019	1094	30849		2358	14888
063	0029	0866	31138		2417	14809
063	0048	0317 G	31825		2536	14598
063	0072	0218	31945		2554	14561
063	0092	0204	31968		2557	14558

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	30833		2352	14894	0000	00000	4373
0010	1121	30813		2351	14896	0044	00002	4391
0020	1077 C	30871		2363	14882	0088	00009	4277
0030	0834 E	3118 B		2425	14797	0128	00019	3683
0050	0294 I	3185 C		2540	14589	0191	00044	2583
0075	0130 I	3206 I		2569	14523	0252	00083	2312

C-REF-NO 004	YR 1963	DEPTH 80	WAVES 1 2021	AIR T 10.0	VIS 6
CONS. NO 132	MONTH 9	MXSAMPD 01	WAVES 2 2232	WET B 10.0	STN
LAT 51-239N	DAY 12	NO.DPTH 6	WND-DIR 200	WW-CODE 80	
LON 56-453W	HR 06.7	W-COLOR	WND-SPD 06	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1005.0	CLD-AMT 9	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
068	0000	108 B	30792		2356	14879
068	0010	1088	30800		2355	14884
068	0020	1008	30905		2377	14858
068	0030	0630	31310		2463	14719
068	0050	0260	31834		2542	14574
068	0075	0223	31913		2551	14563

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	30792		2356	14879	0000	00000	4337
0010	1088	30800		2355	14884	0044	00002	4346
0020	1008	30905		2377	14858	0086	00009	4142
0030	0630	31310		2463	14719	0124	00018	3323
0050	0260	31834		2542	14574	0183	00042	2571
0075	0223	31913		2551	14563	0247	00082	2484

C-REF-NO 004	YR 1963	DEPTH 64	WAVES 1 2022	AIR T 09.0	VIS 5
CONS. NO 133	MONTH 9	MXSAMPD 01	WAVES 2 2232	WET B 09.0	STN
LAT 51-252N	DAY 12	NO.DPTH 6	WND-DIR 190	WW-CODE 63	
LON 56-469W	HR 07.1	W-COLOR	WND-SPD 06	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1003.0	CLD-AMT 9	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
073	0000	093 B	30675		2371	14823
073	0010	0931	30694		2373	14825
073	0020	0781 I	30747		2399	14770
073	0030	0778	30759		2400	14770
073	0050	0286	31748		2533	14584
073	0059	0230	31822		2543	14562

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0930 B	30675		2371	14823	0000	00000	4191
0010	0931	30694		2373	14825	0042	00002	4180
0020	0781 I	30747		2399	14770	0083	00008	3932
0030	0778	30759		2400	14770	0122	00018	3920
0050	0286	31748		2533	14584	0188	00044	2656

C-REF-NO 004	YR 1963	DEPTH 56	WAVES 1 1922	AIR T 09.0	VIS 4
CONS. NO 134	MONTH 9	MXSAMPD 00	WAVES 2 2232	WET B 08.6	STN
LAT 51-266N	DAY 12	NO.DPTH 5	WND-DIR 190	WW-CODE 63	
LON 56-487W	HR 07.6	W-COLOR	WND-SPD 06	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1002.3	CLD-AMT 9	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
077	0000	084 B	30663		2384	14788
077	0010	0845	30675		2384	14792
077	0020	0825	30920		2406	14789
077	0030	0409	31426		2496	14629
077	0050	0274	31709		2531	14578

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0840 B	30663		2384	14788	0000	00000	4072
0010	0845	30675		2384	14792	0041	00002	4071
0020	0825	30920		2406	14789	0081	00008	3862
0030	0409	31426		2496	14629	0115	00017	3004
0050	0274	31709		2531	14578	0172	00040	2676

C-REF-NO 004	YR 1963	DEPTH 104	WAVES 1 1922	AIR T 09.0	VIS 4
CONS. NO 135	MONTH 9	MXSAMPD 01	WAVES 2 2232	WET B 08.5	STN
LAT 51-271N	DAY 12	NO.DPTH 8	WND-DIR 190	WW-CODE 65	
LON 56-493W	HR 08.0	W-COLOR	WND-SPD 06	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1001.6	CLD-AMT 9	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
081	0000	082 B	30540		2377	14779
081	0010	0837	30625		2381	14788
081	0013	0846 B	30716		2387	14793
081	0020	0810	30922		2409	14783
081	0030	0630 F	30905		2431	14714
081	0050	0299	31584		2519	14587
081	0075	0250	31665		2529	14571
081	0100	0176	31848		2549	14545

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0820 B	30540		2377	14779	0000	00000	4136
0010	0837	30625		2381	14788	0041	00002	4097
0020	0810	30922		2409	14783	0081	00008	3840
0030	0630 F	30905		2431	14714	0119	00018	3627
0050	0299	31584		2519	14587	0183	00043	2790
0075	0250	31665		2529	14571	0252	00087	2691
0100	0176	31848		2549	14545	0318	00146	2500

C-REF-NO 004	YR 1963	DEPTH 96	WAVES 1 1822	AIR T 08.2	VIS 4
CONS. NO 136	MONTH 9	MXSAMPD 01	WAVES 2 2232	WET B 07.6	STN
LAT 51-275N	DAY 12	NO.DPTH 8	WND-DIR 160	WW-CODE 65	
LON 56-498W	HR 08.4	W-COLOR	WND-SPD 06	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1000.3	CLD-AMT 9	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
085	0000	080 B	30470		2375	14770
085	0010	0763	30637		2393	14760
085	0013	0650	30597		2404	14715
085	0020	0608	30616		2411	14699
085	0030	0443	31269		2480	14642
085	0050	0294	31541		2516	14585
085	0075	0202	31772		2541	14552
085	0090	0168	31846		2549	14540

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0800 B	30470		2375	14770	0000	00000	4161
0010	0763	30637		2393	14760	0041	00002	3989
0020	0608	30616		2411	14699	0080	00008	3817
0030	0443	31269		2480	14641	0115	00017	3154
0050	0294	31541		2516	14585	0175	00041	2819
0075	0202	31772		2541	14552	0243	00084	2576

C-REF-NO 004	YR 1963	DEPTH 80	WAVES 1 1722	AIR T 08.0	VIS 4
CONS. NO 137	MONTH 9	MXSAMPD 01	WAVES 2 2232	WET B 07.4	STN
LAT 51-278N	DAY 12	NO.DPTH 6	WND-DIR 160	WW-CODE 65	
LON 56-502W	HR 08.8	W-COLOR	WND-SPD 06	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 999.6	CLD-AMT 9	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
089	0000	077 B	30378		2372	14758
089	0010	0770 B	30464		2378	14760
089	0020	0688	30476		2390	14730
089	0030	0486	31046		2458	14657
089	0050	0345	31445		2504	14605
089	0075	0163	31809		2547	14535

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0770 B	30378		2372	14758	0000	00000	4190
0010	0770 B	30464		2378	14760	0042	00002	4127
0020	0688	30476		2390	14730	0083	00008	4016
0030	0486	31046		2458	14657	0120	00018	3364
0050	0345	31445		2504	14605	0183	00043	2933
0075	0163	31809		2547	14535	0252	00086	2521

C-REF-NO 004	YR 1963	DEPTH	96	WAVES 1 1723	AIR T 10.4	VIS 3
CONS. NO 138	MONTH 9	MXSAMPD	01	WAVES 2 2232	WET B 10.0	STN
LAT 51-275N	DAY 12	NO.DPTH	8	WND-DIR 170	WW-CODE 65	
LON 56-498W	HR 09.3	W-COLOR		WND-SPD 12	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 997.6	CLD-AMT 9	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
094	0000	083 B	30541		2376	14783
094	0010	0826	30657		2386	14784
094	0013	0826	30685		2388	14785
094	0020	0646	30602		2405	14715
094	0040	0312 C	31457		2507	14590
094	0060	0203	31740		2539	14549
094	0085	0190	31816		2545	14549
094	0091		31903			

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0830 B	30541		2376	14783	0000	00000	4149
0010	0826	30657		2386	14784	0041	00002	4058
0020	0646	30602		2405	14715	0081	00008	3872
0030	0448 C	3096 I		2456	14640	0118	00017	3389
0050	0238 F	3165 E		2529	14562	0179	00042	2696
0075	0156 I	3178 I		2545	14531	0245	00084	2542

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 2324	AIR T 11.0	VIS 4
CONS. NO 139	MONTH 9	MXSAMPD 01	WAVES 2 2345	WET B 11.0	STN
LAT 51-271N	DAY 12	NO.DPTH 8	WND-DIR 230	WW-CODE 65	
LON 56-493W	HR 10.3	W-COLOR	WND-SPD 15	CLD-TPE X	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 997.6	CLD-AMT 9	HW 10

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
105	0000	076 B	30780		2404	14759
105	0010	0758	30818		2408	14760
105	0013	0756	30813		2408	14760
105	0020	0745	30881		2414	14758
105	0030	0545	31159		2461	14682
105	0050	0341	31502		2509	14605
105	0075	0210	31694		2534	14554
105	0095	0160	31859		2551	14537

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0760 B	30780		2404	14759	0000	00000	3877
0010	0758	30818		2408	14760	0039	00002	3847
0020	0745	30881		2414	14758	0077	00008	3785
0030	0545	31159		2461	14682	0113	00017	3341
0050	0341	31502		2509	14605	0176	00042	2887
0075	0210	31694		2534	14554	0245	00086	2640

C-REF-NO 004	YR 1963	DEPTH	19	WAVES 1 49X0	AIR T 08.0	VIS 8
CONS. NO 140	MONTH 9	MXSAMPD	00	WAVES 2 00X0	WET B 06.4	STN
LAT 51-210N	DAY 18	NO.DPTH	3	WND-DIR 330	WW-CODE 14	
LON 56-417W	HR 09.0	W-COLOR		WND-SPD 01	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1024.7	CLD-AMT 8	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
092	0000	108 B	30656		2346	14878
092	0010	1082	30657		2345	14880
092	0015	1080	30653		2345	14880

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	30656		2346	14878	0000	00000	4438
0010	1082	30657		2345	14880	0045	00002	4442

C-REF-NO 004	YR 1963	DEPTH 66	WAVES 1 00X0	AIR T 08.0	VIS 9
CONS. NO 141	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 06.5	STN
LAT 51-216N	DAY 18	NO.DPTH 7	WND-DIR CALM	WW-CODE 15	
LON 56-423W	HR 09.4	W-COLOR	WND-SPD 00	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1024.7	CLD-AMT 8	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
095	0000	112 B	30568		2332	14891
095	0010	1109	30589		2335	14889
095	0013	1080	30640		2344	14879
095	0020	1076	30654		2346	14879
095	0030	1064	30675		2350	14877
095	0050	0450	31547		2502	14651
095	0060	0429	31587		2507	14645

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	30568		2332	14891	0000	00000	4569
0010	1109	30589		2335	14889	0046	00002	4537
0020	1076	30654		2346	14879	0091	00009	4437
0030	1064	30675		2350	14877	0135	00021	4403
0050	0450	31547		2502	14651	0209	00049	2953

C-REF-NO 004	YR 1963	DEPTH 88	WAVES 1 00X0	AIR T 07.6	VIS 8
CONS. NO 142	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 06.4	STN
LAT 51-222N	DAY 18	NO.DPTH 8	WND-DIR CALM	WW-CODE 15	
LON 56-432W	HR 09.8	W-COLOR	WND-SPD 00	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1024.7	CLD-AMT 8	HW 06

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
099	0000	112 B	30683		2341	14892
099	0010	1106	30696		2344	14889
099	0013	1090	30700		2347	14884
099	0020	1055	30719		2355	14873
099	0030	0964	30825		2378	14842
099	0050	0716	31174		2441	14755
099	0075	0388	31642		2515	14631
099	0080	0379	31643		2516	14628

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	30683		2341	14892	0000	00000	4484
0010	1106	30696		2344	14889	0045	00002	4453
0020	1055	30719		2355	14873	0089	00009	4355
0030	0964	30825		2378	14842	0132	00020	4135
0050	0716	31174		2441	14755	0209	00051	3532
0075	0388	31642		2515	14631	0289	00101	2824

C-REF-NO 004	YR 1963	DEPTH 101	WAVES 1 00X0	AIR T 07.6	VIS 8
CONS. NO 143	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 06.5	STN
LAT 51-226N	DAY 18	NO.DPTH 7	WND-DIR CALM	WW-CODE 15	
LON 56-436W	HR 10.0	W-COLOR	WND-SPD 00	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1024.3	CLD-AMT 8	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
103	0000	109 B	30710		2348	14882
103	0010	1063	30730		2354	14874
103	0020	1030	30766		2363	14864
103	0030	1019	30782		2366	14862
103	0050	0775	31059		2424	14776
103	0075	0379	31650		2517	14627
103	0095	0346	31703		2524	14617

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1090 B	30710		2348	14882	0000	00000	4414
0010	1063	30730		2354	14874	0044	00002	4358
0020	1030	30766		2363	14864	0087	00009	4280
0030	1019	30782		2366	14862	0130	00020	4252
0050	0775	31059		2424	14776	0210	00052	3695
0075	0379	31650		2517	14627	0292	00103	2810

C-REF-NO 004	YR 1963	DEPTH 84	WAVES 1 00X0	AIR T 08.0	VIS B
CONS. NO 144	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 07.4	STN
LAT 51-239N	DAY 18	NO.DPTH 7	WND-DIR CALM	WW-CODE 01	
LON 56-453W	HR 10.5	W-COLOR	WND-SPD 00	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1024.3	CLD-AMT 4	HW 07

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
107	0000	113 B	30747		2344	14897
107	0010	1073	30723		2352	14878
107	0020	1016	30778		2366	14859
107	0030	0882	30898		2396	14812
107	0050	0586	31300		2467	14704
107	0075	0389	31540		2507	14630
107	0080	0389	31547		2508	14631

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1130 B	30747		2344	14897	0000	00000	4453
0010	1073	30723		2352	14877	0044	00002	4379
0020	1016	30778		2366	14859	0088	00009	4249
0030	0882	30898		2396	14812	0129	00019	3960
0050	0586	31300		2467	14704	0202	00048	3282
0075	0389	31540		2507	14630	0279	00098	2902

C-REF-NO 004	YR 1963	DEPTH 60	WAVES 1 00X0	AIR T 09.0	VIS B
CONS. NO 145	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 08.6	STN
LAT 51-252N	DAY 18	NO.DPTH 6	WND-DIR CALM	WW-CODE 03	
LON 56-469W	HR 11.0	W-COLOR	WND-SPD 00	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1024.3	CLD-AMT 8	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
111	0000	108 B	30757		2353	14879
111	0010	1090	30747		2351	14884
111	0020	1032	30742		2360	14864
111	0030	0887	30841		2391	14813
111	0050	0436	31426		2494	14644
111	0055	0333	31563		2514	14603

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	30757		2353	14879	0000	00000	4363
0010	1090	30747		2351	14884	0044	00002	4389
0020	1032	30742		2360	14864	0088	00009	4301
0030	0887	30841		2391	14813	0129	00020	4010
0050	0436	31426		2494	14644	0200	00048	3030

C-REF-NO 004	YR 1963	DEPTH 60	WAVES 1 00X0	AIR T 09.0	VIS 8
CONS. NO 146	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 08.3	STN
LAT 51-266N	DAY 18	NO.DPTH 6	WND-DIR CALM	WW-CODE 03	
LON 56-487W	HR 11.3	W-COLOR	WND-SPD 00	CLD-TPE 8	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1023.3	CLD-AMT 6	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
114	0000	105 B	30712		2355	14867
114	0010	0921	30704		2375	14821
114	0020	0452	31208		2475	14643
114	0030	0324	31439		2505	14593
114	0050	0282	31527		2516	14579
114	0055	0280	31534		2516	14579

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1050 B	30712		2355	14867	0000	00000	4348
0010	0921	30704		2375	14821	0043	00002	4158
0020	0452	31208		2475	14643	0080	00008	3208
0030	0324	31439		2505	14593	0111	00015	2920
0050	0282	31527		2516	14579	0168	00039	2820

C-REF-NO 004	YR 1963	DEPTH 102	WAVES 1 00X0	AIR T 08.9	VIS 8
CONS. NO 147	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 08.5	STN
LAT 51-271N	DAY 18	NO.DPTH 8	WND-DIR CALM	WW-CODE 03	
LON 56-493W	HR 11.6	W-COLOR	WND-SPD 00	CLD-TPE 8	
MARSD SQ 186	C/I 1910	W-TRNSP	BARO 1022.6	CLD-AMT 6	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
118	0000	098 B	30688		2365	14841
118	0010	0589	31127		2453	14697
118	0013	0494	31166		2467	14659
118	0020	0414	31277		2484	14628
118	0030	0310	31432		2506	14587
118	0050	0267	31539		2518	14573
118	0075	0236	31615		2526	14565
118	0095	0233	31610		2526	14566

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0980 B	30688		2365	14841	0000	00000	4257
0010	0589	31127		2453	14697	0039	00002	3412
0020	0414	31277		2484	14628	0071	00007	3120
0030	0310	31432		2506	14587	0102	00014	2913
0050	0267	31539		2518	14573	0159	00038	2799
0075	0236	31615		2526	14564	0229	00082	2719

C-REF-NO 004	YR 1963	DEPTH 106	WAVES 1 00X0	AIR T 08.9	VIS B
CONS. NO 148	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 08.5	STN
LAT 51-275N	DAY 18	NO.DPTH 8	WND-DIR CALM	WW-CODE 02	
LON 56-498W	HR 12.0	W-COLOR	WND-SPD 00	CLD-TPE 8	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1022.6	CLD-AMT 4	HW 08

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
121	0000	085 B	30773		2391	14794
121	0010	0594	31026		2445	14697
121	0013	0564	31038		2449	14686
121	0020	0543	31042		2452	14678
121	0030	0328	31347		2497	14594
121	0050	0277	31453		2510	14576
121	0075	0201	31692		2535	14550
121	0100	0200	31707		2536	14554

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0850 B	30773		2391	14794	0000	00000	4004
0010	0594	31026		2445	14697	0038	00002	3493
0020	0543	31042		2452	14678	0072	00007	3426
0030	0328	31347		2497	14594	0105	00015	2992
0050	0277	31453		2510	14576	0164	00039	2872
0075	0201	31692		2535	14550	0233	00083	2636
0100	0200	31707		2536	14554	0299	00143	2624

C-REF-NO 004	YR 1963	DEPTH	59	WAVES 1 00X0	AIR T 08.8	VIS 8
CONS. NO 149	MONTH 9	MXSAMPD	00	WAVES 2 00X0	WET B 08.6	STN
LAT 51-278N	DAY 18	NO.DPTH	5	WND-DIR CALM	WW-CODE 02	
LON 56-503W	HR 12.2	W-COLOR		WND-SPD 00	CLD-TPE 8	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1022.0	CLD-AMT 4	HW 09

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
124	0000	038 B	31233		2484	14609
124	0010	0331	31301		2493	14591
124	0020	0304	31395		2503	14582
124	0030	0272	31456		2511	14571
124	0050	0249	31546		2520	14565

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0380 B	31233		2484	14609	0000	00000	3122
0010	0331	31301		2493	14591	0031	00002	3029
0020	0304	31395		2503	14582	0061	00006	2936
0030	0272	31456		2511	14571	0090	00014	2866
0050	0249	31546		2520	14565	0147	00037	2780

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 00X0	AIR T 09.2	VIS 8
CONS. NO 150	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 09.0	STN
LAT 51-275N	DAY 18	NO.DPTH 8	WND-DIR CALM	WW-CODE 03	
LON 56-498W	HR 12.5	W-COLOR	WND-SPD 00	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1021.3	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
127	0000	076 B	30911		2415	14761
127	0010	0479	31089		2463	14651
127	0013	0392	31203		2480	14616
127	0020	0389	31243		2484	14617
127	0030	0256	31491		2515	14564
127	0050	0212	31654		2531	14550
127	0075	0184	31738		2540	14543
127	0090	0183	31738		2540	14545

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0760 B	30911		2415	14761	0000	00000	3779
0010	0479	31089		2463	14651	0036	00002	3324
0020	0389	31243		2484	14617	0068	00007	3123
0030	0256	31491		2515	14564	0098	00014	2827
0050	0212	31654		2531	14550	0153	00037	2672
0075	0184	31738		2540	14543	0220	00079	2589

C-REF-NO 004	YR 1963	DEPTH 105	WAVES 1 49X0	AIR T 08.6	VIS B
CONS. NO 151	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 08.5	STN
LAT 51-271N	DAY 18	NO.DPTH 8	WND-DIR 270	WW-CODE 03	
LON 56-493W	HR 12.9	W-COLOR	WND-SPD 01	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1021.3	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
131	0000	072 B	30919		2421	14745
131	0010	0508	31143		2464	14664
131	0013	0476	31166		2469	14651
131	0020	0400	31220		2481	14621
131	0030	0361	31251		2487	14606
131	0050	0246	31526		2518	14564
131	0075	0193	31711		2537	14547
131	0100	0177	31757		2542	14544

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0720 B	30919		2421	14745	0000	00000	3722
0010	0508	31143		2464	14664	0035	00002	3312
0020	0400	31220		2481	14621	0068	00007	3150
0030	0361	31251		2487	14606	0099	00015	3093
0050	0246	31526		2518	14564	0158	00039	2793
0075	0193	31711		2537	14547	0226	00082	2616
0100	0177	31757		2542	14544	0292	00140	2570

C-REF-NO 004	YR 1963	DEPTH 64	WAVES 1 24X1	AIR T 09.6	VIS 8
CONS. NO 152	MONTH 9	MXSAMPD 01	WAVES 2 24X1	WET B 09.5	STN
LAT 51-266N	DAY 18	NO.DPTH 6	WND-DIR 240	WW-CODE 02	
LON 56-486W	HR 13.2	W-COLOR	WND-SPD 03	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1020.9	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
134	0000	062 B	30995		2439	14706
134	0008	0589	31056		2448	14696
134	0018	0429	31144		2472	14632
134	0028	0321	31413		2503	14591
134	0048	0202	31724		2537	14547
134	0058	0198	31730		2538	14547

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0620 B	30995		2439	14706	0000	00000	3545
0010	0560 E	3107 B		2452	14684	0035	00002	3426
0020	0404	3119 B		2478	14622	0068	00007	3174
0030	0303	31460		2508	14584	0099	00015	2887
0050	0200	3173 B		2538	14546	0154	00037	2610

C-REF-NO 004	YR 1963	DEPTH 66	WAVES 1 24X2	AIR T 11.2	VIS 8
CONS. NO 153	MONTH 9	MXSAMPD 01	WAVES 2 24X1	WET B 10.4	STN
LAT 51-252N	DAY 18	NO.DPTH 6	WND-DIR 240	WW-CODE 02	
LON 56-469W	HR 13.6	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1019.3	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
137	0000	108 B	30747		2353	14879
137	0010	1066	30740		2355	14875
137	0020	0868	30794		2390	14804
137	0030	0582 B	31090		2451	14697
137	0050	0339	31479		2507	14603
137	0060	0306	31545		2515	14592

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	30747		2353	14879	0000	00000	4371
0010	1066	30740		2355	14875	0044	00002	4355
0020	0868	30794		2390	14804	0086	00009	4016
0030	0582 B	31090		2451	14697	0123	00018	3433
0050	0339	31479		2507	14603	0187	00044	2903

C-REF-NO 004	YR 1963	DEPTH 85	WAVES 1 24X2	AIR T 12.1	VIS 8
CONS. NO 154	MONTH 9	MXSAMPD 01	WAVES 2 24X1	WET B 12.0	STN
LAT 51-239N	DAY 18	NO.DPTH 7	WND-DIR 240	WW-CODE 02	
LON 56-453W	HR 14.0	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1019.3	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
142	0000	110 B	30677		2344	14885
142	0010	1084	30689		2348	14881
142	0020	1065	30703		2352	14876
142	0030	0920 B	30780		2381	14825
142	0050	0559 E	31260		2467	14693
142	0075	0466	31436		2491	14661
142	0080	0469	31436		2491	14663

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	30677		2344	14885	0000	00000	4455
0010	1084	30689		2348	14881	0045	00002	4422
0020	1065	30703		2352	14876	0089	00009	4382
0030	0920 B	30780		2381	14825	0131	00020	4103
0050	0559 E	31260		2467	14693	0206	00049	3282
0075	0466	31436		2491	14661	0285	00100	3054

C-REF-NO 004	YR 1963	DEPTH 104	WAVES 1 25X2	AIR T 11.5	VIS 8
CONS. NO 155	MONTH 9	MXSAMPD 01	WAVES 2 25X1	WET B 10.8	STN
LAT 51-226N	DAY 18	NO.DPTH 7	WND-DIR 250	WW-CODE 02	
LON 56-437W	HR 14.5	W-COLOR	WND-SPD 06	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1019.3	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
147	0000	110 B	30672		2343	14885
147	0010	1094	30700		2347	14885
147	0020	1079	30705		2350	14881
147	0030	0925	30885		2389	14828
147	0050	0698	30751		2410	14742
147	0075	0507	31470		2490	14678
147	0100	0426	31583		2507	14650

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	30672		2343	14885	0000	00000	4459
0010	1094	30700		2347	14885	0045	00002	4430
0020	1079	30705		2350	14881	0089	00009	4404
0030	0925	30885		2389	14828	0131	00020	4032
0050	0698	30751		2410	14742	0210	00052	3826
0075	0507	31470		2490	14678	0297	00106	3070
0100	0426	31583		2507	14650	0372	00173	2905

C-REF-NO 004	YR 1963	DEPTH	86	WAVES 1 25X2	AIR T 11.7	VIS	B
CONS. NO 156	MONTH 9	MXSAMPD	01	WAVES 2 25X1	WET B 10.8	STN	
LAT 51-222N	DAY 18	NO.DPTH	8	WND-DIR 250	WW-CODE 02		
LON 56-432W	HR 15.0	W-COLOR		WND-SPD 05	CLD-TPE 4		
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1018.6	CLD-AMT 8	HW	

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
151	0000	112 B	30693		2342	14892
151	0010	1124	30683		2340	14895
151	0013	1122	30682		2340	14895
151	0020	1084	30693		2348	14883
151	0030	1045	30698		2355	14870
151	0050	0552	31403		2479	14692
151	0075	0404	31615		2512	14637
151	0080	0401	31618		2512	14637

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	30693		2342	14892	0000	00000	4477
0010	1124	30683		2340	14895	0045	00002	4492
0020	1084	30693		2348	14883	0090	00009	4421
0030	1045	30698		2355	14870	0134	00020	4356
0050	0552	31403		2479	14692	0209	00050	3167
0075	0404	31615		2512	14637	0285	00098	2859

C-REF-NO 004	YR 1963	DEPTH 62	WAVES 1 23X2	AIR T 12.7	VIS 8
CONS. NO 157	MONTH 9	MXSAMPD 01	WAVES 2 25X1	WET B 12.0	STN
LAT 51-216N	DAY 18	NO.DPTH 7	WND-DIR 230	WW-CODE 02	
LON 56-423W	HR 15.4	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1017.6	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
155	0000	112 B	30623		2336	14891
155	0010	1110	30617		2337	14889
155	0013	1103	30621		2339	14888
155	0020	1088	30654		2344	14884
155	0030	1067	30692		2351	14878
155	0050	0516	31449		2487	14678
155	0055	0506	31467		2490	14675

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1120 B	30623		2336	14891	0000	00000	4528
0010	1110	30617		2337	14889	0045	00002	4518
0020	1088	30654		2344	14884	0090	00009	4456
0030	1067	30692		2351	14878	0135	00021	4396
0050	0516	31449		2487	14678	0210	00050	3094

C-REF-NO 004	YR 1963	DEPTH 16	WAVES 1 23X2	AIR T 12.5	VIS 8
CONS. NO 158	MONTH 9	MXSAMPD 00	WAVES 2 25X1	WET B 11.0	STN
LAT 51-210N	DAY 18	NO.DPTH 2	WND-DIR 230	WW-CODE 02	
LON 56-417W	HR 15.7	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1016.9	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
158	0000	110 B	30630		2340	14884
158	0010	1102	30621		2339	14887

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	30630		2340	14884	0000	00000	4490
0010	1102	30621		2339	14887	0045	00002	4502

C-REF-NO 004	YR 1963	DEPTH 70	WAVES 1 23X2	AIR T 12.5	VIS 8
CONS. NO 159	MONTH 9	MXSAMPD 01	WAVES 2 23X1	WET B 11.0	STN
LAT 51-216N	DAY 18	NO.DPTH 7	WND-DIR 230	WW-CODE 02	
LON 56-423W	HR 15.9	W-COLOR	WND-SPD 07	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1016.5	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
160	0000	114 B	30666		2336	14899
160	0010	1134	30675		2338	14899
160	0013	1124	30669		2339	14896
160	0020	1105	30658		2342	14890
160	0030	1041	30733		2358	14869
160	0050	0556	31394		2478	14693
160	0065	0446	31550		2502	14652

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1140 B	30666		2336	14899	0000	00000	4530
0010	1134	30675		2338	14899	0045	00002	4515
0020	1105	30658		2342	14890	0091	00009	4481
0030	1041	30733		2358	14869	0135	00021	4324
0050	0556	31394		2478	14693	0210	00050	3178

C-REF-NO 004	YR 1963	DEPTH 90	WAVES 1 23X2	AIR T 12.1	VIS 8
CONS. NO 160	MONTH 9	MXSAMPD 01	WAVES 2 25X1	WET B 10.8	STN
LAT 51-222N	DAY 18	NO.DPTH 8	WND-DIR 230	WW-CODE 02	
LON 56-432W	HR 16.2	W-COLOR	WND-SPD 08	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1015.9	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
163	0000	110 B	30712		2347	14885
163	0010	1086	30713		2349	14882
163	0013	1078	30730		2352	14880
163	0020	1024 B	30765		2363	14862
163	0030	0946 D	30846		2382	14836
163	0050	0512	31452		2488	14676
163	0075	0441	31561		2504	14652
163	0085	0404	31616		2512	14639

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	30712		2347	14885	0000	00000	4429
0010	1086	30713		2349	14882	0044	00002	4407
0020	1024 B	30765		2363	14862	0088	00009	4271
0030	0946 D	30846		2382	14836	0130	00020	4093
0050	0512	31452		2488	14676	0202	00048	3087
0075	0441	31561		2504	14652	0278	00096	2935

C-REF-NO 004	YR 1963	DEPTH 104	WAVES 1 23X2	AIR T 12.2	VIS 8
CONS. NO 161	MONTH 9	MXSAMPD 01	WAVES 2 25X1	WET B 11.1	STN
LAT 51-226N	DAY 18	NO.DPTH 7	WND-DIR 240	WW-CODE 02	
LON 56-437W	HR 16.6	W-COLOR	WND-SPD 08	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1015.5	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
167	0000	108 B	30715		2350	14878
167	0010	1054 B	30738		2356	14871
167	0020	0958	30827		2379	14838
167	0030	0883	30935		2399	14813
167	0050	0614	31299		2464	14716
167	0075	0476	31501		2495	14666
167	0100	0382	31651		2517	14632

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	30715		2350	14878	0000	00000	4394
0010	1054 B	30738		2356	14871	0044	00002	4337
0020	0958	30827		2379	14838	0086	00009	4123
0030	0883	30935		2399	14813	0127	00019	3934
0050	0614	31299		2464	14716	0200	00048	3315
0075	0476	31501		2495	14666	0279	00099	3015
0100	0382	31651		2517	14632	0353	00164	2813

C-REF-NO 004	YR 1963	DEPTH 80	WAVES 1 24X2	AIR T 12.2	VIS 8
CONS. NO 162	MONTH 9	MXSAMPD 01	WAVES 2 25X1	WET B 11.4	STN
LAT 51-239N	DAY 18	NO.DPTH 6	WND-DIR 240	WW-CODE 02	
LON 56-453W	HR 17.0	W-COLOR	WND-SPD 08	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1014.5	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
171	0000	110 B	30697		2345	14885
171	0010	1091	30722		2349	14884
171	0020	1068	30716		2352	14877
171	0030	0918 B	30791		2382	14824
171	0050	0581	31320		2470	14703
171	0075	0362	31524		2508	14618

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1100 B	30697		2345	14885	0000	00000	4440
0010	1091	30722		2349	14884	0044	00002	4409
0020	1068	30716		2352	14877	0089	00009	4378
0030	0918 B	30791		2382	14824	0131	00020	4092
0050	0581	31320		2470	14703	0205	00049	3261
0075	0362	31524		2508	14618	0282	00098	2889

C-REF-NO 004	YR 1963	DEPTH 60	WAVES 1 24X2	AIR T 12.2	VIS B
CONS. NO 163	MONTH 9	MXSAMPD 01	WAVES 2 25X1	WET B 11.1	STN
LAT 51-252N	DAY 18	NO.DPTH 6	WND-DIR 240	WW-CODE 02	
LON 56-469W	HR 17.4	W-COLOR	WND-SPD 08	CLO-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1013.8	CLO-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
175	0000	108 B	30732		2352	14879
175	0010	1067	30734		2354	14875
175	0020	0906	30807		2385	14819
175	0030	0701	30959		2426	14743
175	0050	0350	31467		2505	14608
175	0055	0268	31615		2524	14575

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1080 B	30732		2352	14879	0000	00000	4382
0010	1067	30734		2354	14875	0044	00002	4361
0020	0906	30807		2385	14819	0086	00009	4061
0030	0701	30959		2426	14743	0125	00019	3672
0050	0350	31467		2505	14608	0191	00045	2921

C-REF-NO 004	YR 1963	DEPTH 60	WAVES 1 2+X2	AIR 7 12.2	VIS 8
CONS. NO 164	MONTH 9	MXSAMPD 01	WAVES 2 25X1	WET 8 11.5	STN
LAT 51-266N	DAY 18	NO.DPTH 6	WND-DIR 240	WW-CODE 02	
LON 56-487W	HR 17.8	W-COLOR	WND-SPD 08	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1013.8	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
180	0000	098 R	30780		2372	14843
180	0010	0926	30768		2379	14824
180	0020	0733	30906		2418	14753
180	0030	0546	31104		2456	14682
180	0050	0330	31455		2506	14599
180	0055	0243	31615		2526	14564

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA D	POLLEN	SVA
0000	0980 B	30780		2372	14843	0000	00000	4188
0010	0926	30768		2379	14824	0042	00002	4118
0020	0733	30906		2418	14753	0081	00008	3751
0030	0546	31104		2456	14682	0117	00017	3383
0050	0330	31455		2506	14599	0180	00043	2913

C-REF-NO 004	YR 1963	DEPTH	96	WAVES 1 24X2	AIR T 12.2	VIS 8
CONS. NO 165	MONTH 9	MXSAMPD	01	WAVES 2 25X1	WET B 11.6	STN
LAT 51-271N	DAY 18	NO.DPTH	8	WND-DIR 240	WW-CODE 02	
LON 56-493W	HR 18.1	W-COLOR		WND-SPD 08	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1013.2	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
183	0000	093 B	30764		2378	14824
183	0010	0804	30819		2401	14778
183	0013	0770	30869		2410	14766
183	0020	0636	30997		2437	14716
183	0030	0640	31006		2438	14719
183	0050	0407	31290		2486	14630
183	0075	0329	31423		2503	14602
183	0090	0305	31458		2508	14595

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0930 B	30764		2378	14824	0000	00000	4125
0010	0804	30819		2401	14778	0040	00002	3908
0020	0636	30997		2437	14716	0078	00008	3564
0030	0640	31006		2438	14719	0114	00017	3563
0050	0407	31290		2486	14630	0181	00044	3105
0075	0329	31423		2503	14602	0257	00092	2937

C-REF-NO 004	YR 1963	DEPTH 96	WAVES 1 24X1	AIR T 11.2	VIS 7
CONS. NO 166	MONTH 9	MXSAMPD 01	WAVES 2 25X1	WET B 10.5	STN
LAT 51-275N	DAY 18	NO.DPTH 8	WND-DIR 240	WW-CODE 02	
LON 56-498W	HR 18.5	W-COLOR	WND-SPD 06	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1013.2	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
186	0000	088 B	30799		2389	14805
186	0010	0715	30890		2419	14744
186	0013	0678	30931		2427	14731
186	0020	0563	31057		2451	14687
186	0030	0519	31129		2461	14671
186	0050	0485	31164		2468	14661
186	0075	0244	31578		2523	14568
186	0090	0221	31640		2529	14561

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0880 B	30799		2389	14805	0000	00000	4027
0010	0715	30890		2419	14744	0039	00002	3739
0020	0563	31057		2451	14687	0075	00007	3436
0030	0519	31129		2461	14671	0109	00016	3336
0050	0485	31164		2468	14661	0176	00042	3276
0075	0244	31578		2523	14567	0251	00091	2753

C-REF-NO 004	YR 1963	DEPTH 68	WAVES 1 24X1	AIR T 11.0	VIS 7
CONS. NO 167	MONTH 9	MXSAMPD 01	WAVES 2 25X1	WET B 10.2	STN
LAT 51-278N	DAY 18	NO.DPTH 6	WND-DIR 240	WW-CODE 01	
LON 56-503W	HR 18.8	W-COLOR	WND-SPD 06	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1012.5	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	071 B	30886		2419	14741
189	0010	0665	30942		2430	14725
189	0020	0624	30986		2438	14711
189	0030	0476	31212		2473	14655
189	0050	0341	31414		2502	14603
189	0060	0318	31452		2507	14596

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0710 B	30886		2419	14741	0000	00000	3734
0010	0665	30942		2430	14725	0037	00002	3638
0020	0624	30986		2438	14711	0073	00007	3558
0030	0476	31212		2473	14655	0107	00016	3229
0050	0341	31414		2502	14603	0169	00041	2953

C-REF-NO 004	YR 1963	DEPTH	96	WAVES 1 24X1	AIR T 11.0	VIS 7
CONS. NO 168	MONTH 9	MXSAMPD	01	WAVES 2 25X2	WET B 10.4	STN
LAT 51-275N	DAY 18	NO.DPTH	8	WND-DIR 240	WW-CODE 01	
LON 56-498W	HR 19.1	W-COLOR		WND-SPD 06	CLD-TPE 4	
MARSD SQ 186	C/I 1810	W-TRNSP		BARO 1012.1	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
192	0000	085 B	30816		2395	14794
192	0010	0673	30977		2431	14729
192	0013	0658	30958		2432	14723
192	0020	0627	31007		2439	14712
192	0030	0573	31094		2453	14693
192	0050	0532	31172		2463	14681
192	0075	0272	31537		2517	14579
192	0090	0224	31636		2529	14562

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0850 B	30816		2395	14794	0000	03000	3972
0010	0673	30977		2431	14729	0038	00002	3622
0020	0627	31007		2439	14712	0074	00007	3546
0030	0573	31094		2453	14693	0109	00016	3420
0050	0532	31172		2463	14681	0177	00044	3319
0075	0272	31537		2517	14579	0254	00092	2805

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 24X1	AIR T 11.0	VIS 7
CONS. NO 169	MONTH 9	MXSAMPD 01	WAVES 2 24X2	WET B 10.2	STN
LAT 51-271N	DAY 18	NO.DPTH 8	WND-DIR 240	WW-CODE 01	
LON 56-493W	HR 19.4	W-COLOR	WND-SPD 06	CLD-TPE 2	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1011.1	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	082 B	30807		2398	14782
196	0010	0764	30864		2410	14763
196	0013	0754	30894		2414	14760
196	0020	0748	30920		2417	14759
196	0030	0584 B	31219		2461	14699
196	0050	0399	31366		2492	14627
196	0075	0326	31454		2506	14602
196	0095	0302 C	31495		2511	14595

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0820 B	30807		2398	14782	0000	00000	3937
0010	0764	30864		2410	14763	0039	00002	3821
0020	0748	30920		2417	14759	0077	00008	3760
0030	0584 B	31219		2461	14699	0113	00017	3339
0050	0399	31366		2492	14627	0177	00043	3041
0075	0326	31454		2506	14601	0252	00091	2911

C-REF-NO 004	YR 1963	DEPTH 58	WAVES 1 24X1	AIR T 12.0	VIS 7
CONS. NO 170	MONTH 9	MXSAMPD 00	WAVES 2 25X2	WET B 11.2	STN
LAT 51-266N	DAY 18	NO.DPTH 5	WNO-DIR 240	WW-CODE 01	
LON 56-487W	HR 19.8	W-COLOR	WNO-SPD 06	CLD-TPE 2	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1010.5	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	084 B	30771		2392	14790
199	0010	0828	30782		2395	14787
199	0020	0827	30798		2396	14788
199	0030	0552 D	31245		2467	14686
199	0050	0381	31394		2496	14620

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0840 B	30771		2392	14790	0000	00000	3991
0010	0828	30782		2395	14787	0040	00002	3968
0020	0827	30798		2396	14788	0080	00008	3956
0030	0552 D	31245		2467	14686	0116	00017	3284
0050	0381	31394		2496	14620	0179	00043	3003

C-REF-NO 004	YR 1963	DEPTH 63	WAVES 1 24X2	AIR T 12.2	VIS 7
CONS. NO 171	MONTH 9	MXSAMPD 01	WAVES 2 25X2	WET B 11.5	STN
LAT 51-252N	DAY 18	NO.DPTH 6	WND-DIR 240	WW-CODE 15	
LON 56-464W	HR 20.2	W-COLOR	WND-SPD 07	CLD-TPE 2	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
204	0000	120 B	30793		2335	14922
204	0010	1206	30777		2333	14925
204	0020	1070	30801		2359	14879
204	0030	0820 F	30981		2412	14790
204	0050	0375	31445		2501	14618
204	0058	0316	31489		2510	14595

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1200 B	30793		2335	14922	0000	00000	4539
0010	1206	30777		2333	14925	0046	00002	4563
0020	1070	30801		2359	14879	0090	00009	4318
0030	0820 F	30981		2412	14790	0131	00019	3811
0050	0375	31445		2501	14618	0199	00046	2960

C-REF-NO 004	YR 1963	DEPTH 80	WAVES 1 24X3	AIR T 12.0	VIS 6
CONS. NO 172	MONTH 9	MXSAMPD 01	WAVES 2 25X3	WET B 11.5	STN
LAT 51-239N	DAY 18	NO.DPTH 6	WND-DIR 240	WW-CODE 15	
LON 56-453W	HR 20.8	W-COLOR	WND-SPD 12	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
208	0000	118 B	30767		2337	14915
208	0010	1172	30761		2338	14913
208	0020	1134	30760		2344	14901
208	0030	1093	30780		2353	14889
208	0050	0483	31482		2493	14664
208	0075	0349	31590		2515	14613

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1180 B	30767		2337	14915	0000	00000	4524
0010	1172	30761		2338	14913	0045	00002	4516
0020	1134	30760		2344	14901	0090	00009	4454
0030	1093	30780		2353	14889	0135	00021	4373
0050	0483	31482		2493	14664	0209	00050	3035
0075	0349	31590		2515	14613	0283	00097	2828

C-REF-NO 004	YR 1963	DEPTH 100	WAVES 1 24X4	AIR T 14.2	VIS 6
CONS. NO 173	MONTH 9	MXSAMPD 01	WAVES 2 25X2	WET B 11.8	STN
LAT 51-226N	DAY 18	NO.DPTH 7	WND-DIR 240	WW-CODE 15	
LON 56-437W	HR 21.2	W-COLOR	WND-SPD 13	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1008.4	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
214	0000	114 B	30712		2340	14900
214	0010	1140	30712		2340	14901
214	0020	1137	30714		2340	14902
214	0030	1134	30723		2341	14903
214	0050	0638 G	31243		2457	14725
214	0075	0356	31691		2522	14618
214	0090	0332	31723		2527	14610

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1140 B	30712		2340	14900	0000	00000	4496
0010	1140	30712		2340	14901	0045	00002	4498
0020	1137	30714		2340	14902	0090	00009	4493
0030	1134	30723		2341	14903	0135	00021	4483
0050	0638 G	31243		2457	14725	0214	00052	3385
0075	0356	31691		2522	14618	0292	00100	2758

C-REF-NO 004	YR 1963	DEPTH 80	WAVES 1 23X3	AIR T 13.0	VIS 6
CONS. NO 174	MONTH 9	MXSAMPD 01	WAVES 2 25X2	WET B 11.5	STN
LAT 51-222N	DAY 18	NO.DPTH 7	WND-DIR 230	WW-CODE 15	
LON 56-432W	HR 21.6	W-COLOR	WND-SPD 15	CLD-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
217	0000	115 B	30707		2337	14903
217	0008	1156	30711		2337	14907
217	0011	1154	30709		2337	14906
217	0018	1154	30713		2337	14908
217	0028	1152	30705		2337	14908
217	0048	1150	30709		2338	14911
217	0073	0614 B	31467		2477	14722

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1150 B	30707		2337	14903	0000	00000	4517
0010	1155	30710		2337	14907	0045	00002	4525
0020	1154	30712		2337	14908	0091	00009	4523
0030	1160 F	3069 C		2334	14912	0136	00021	4550
0050	1061 I	3083 I		2362	14881	0225	00057	4288
0075	0560 G	3154 C		2490	14701	0318	00114	3072

C-REF-NO 004	YR 1963	DEPTH 60	WAVES 1 23X3	AIR T 12.4	VIS 6
CONS. NO 175	MONTH 9	MXSAMPD 00	WAVES 2 24X2	WET B 11.6	STN
LAT 51-216N	DAY 18	NO.DPTH 6	WND-DIR 230	WW-CODE 15	
LON 56-423W	HR 22.0	W-COLOR	WND-SPD 15	CLO-TPE 6	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1009.1	CLO-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
221	0000	114 B	30668		2336	14899
221	0010	1146	30673		2335	14903
221	0013	1144 B	30673		2336	14903
221	0020	1145	30672		2336	14904
221	0030	1124	30698		2341	14899
221	0050	0888	30983		2402	14819

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1140 B	30668		2336	14899	0000	00000	4529
0010	1146	30673		2335	14903	0046	00002	4537
0020	1145	30672		2336	14904	0091	00009	4538
0030	1124	30698		2341	14899	0136	00021	4485
0050	0888	30983		2402	14819	0221	00055	3908

C-REF-NO 004	YR 1963	DEPTH 20	WAVES 1 23X3	AIR T 12.2	VIS 5
CONS. NO 176	MONTH 9	MXSAMPD 00	WAVES 2 24X2	WET B 11.6	STN
LAT 51-210N	DAY 18	NO.DPTH 3	WND-DIR 230	WW-CODE 01	
LON 56-417W	HR 22.3	W-COLOR	WND-SPD 15	CLD-TPE 5	
MARSD SQ 186	C/I 1810	W-TRNSP	BARO 1007.7	CLD-AMT 6	HW

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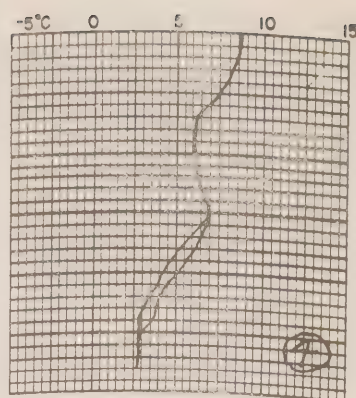
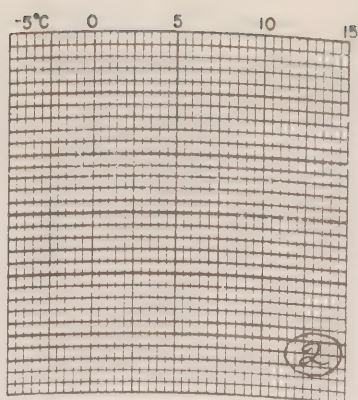
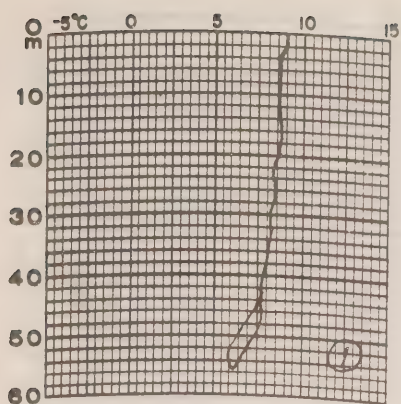
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224	0010	1104	30614		2338	14887
224	0015	1100	30629		2340	14887

I N T E R P O L A T E D

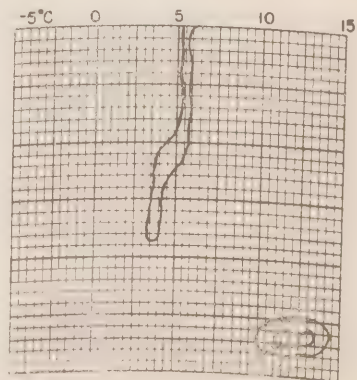
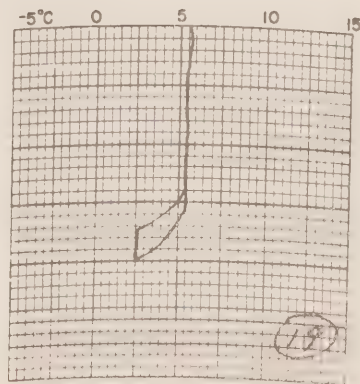
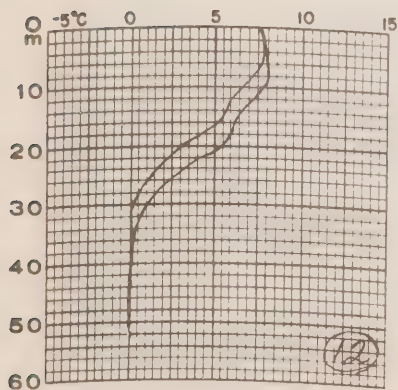
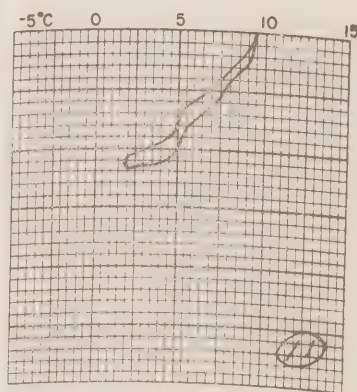
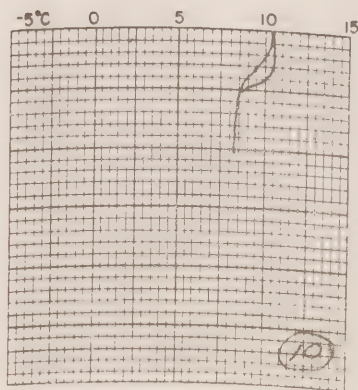
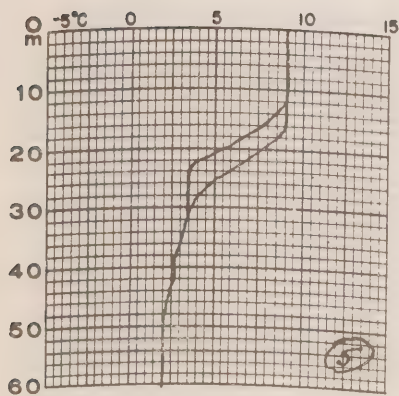
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0010	1104	30614		2338	14887	0046	00002	4510

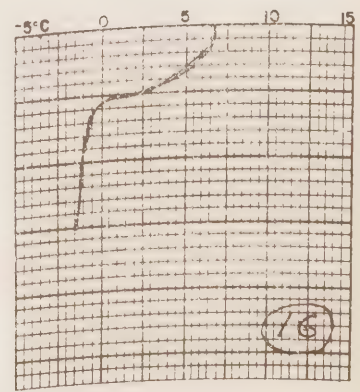
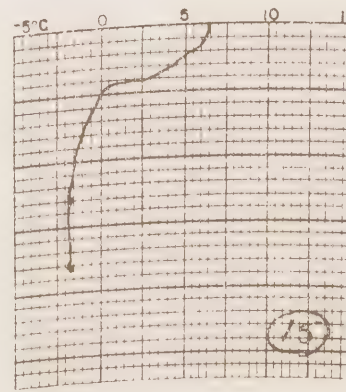
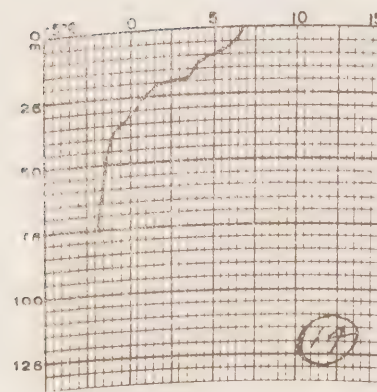
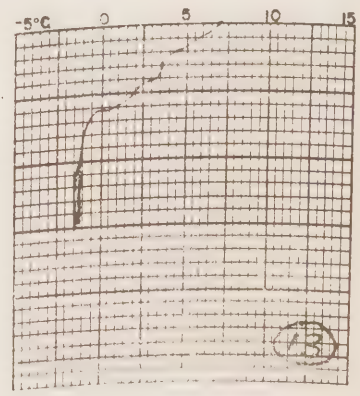
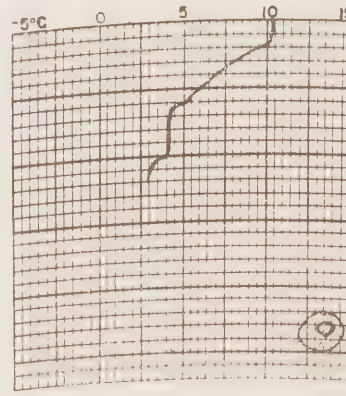
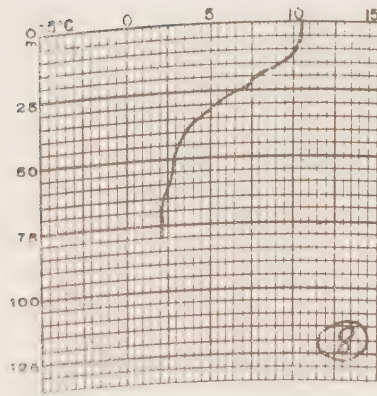
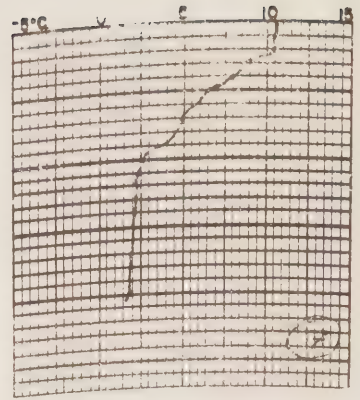
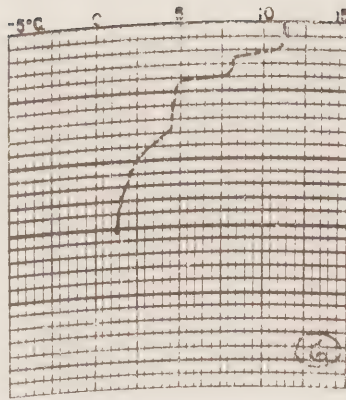
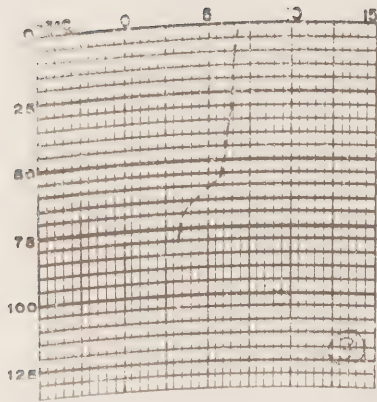
SECTION IV

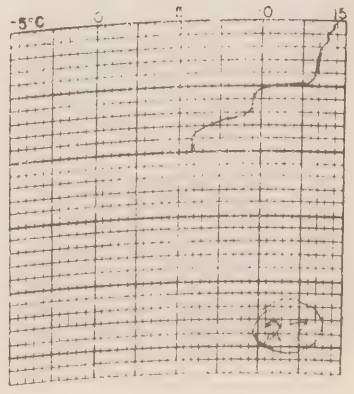
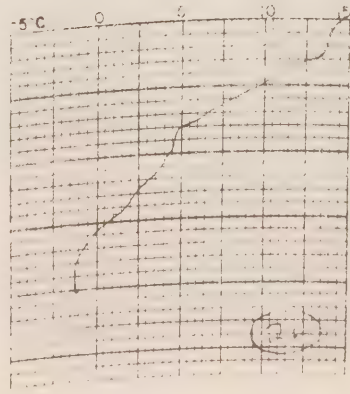
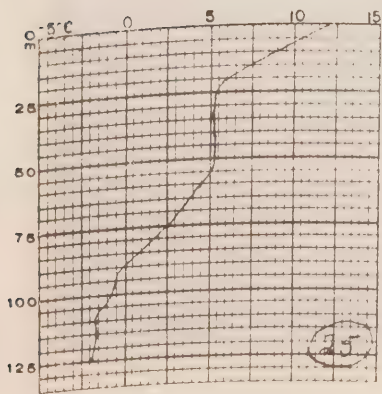
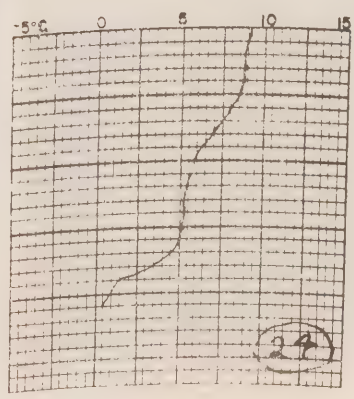
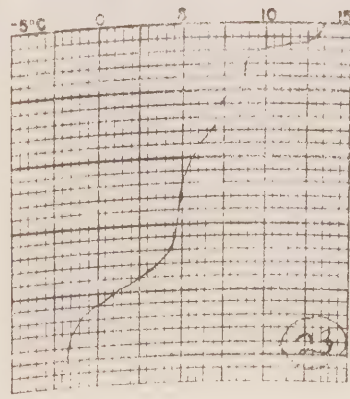
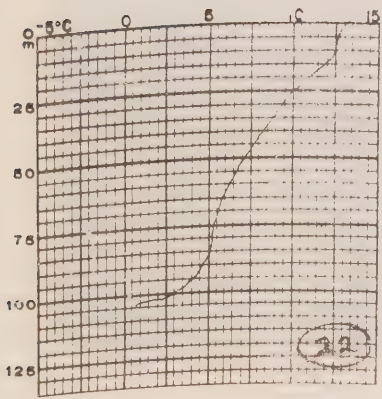
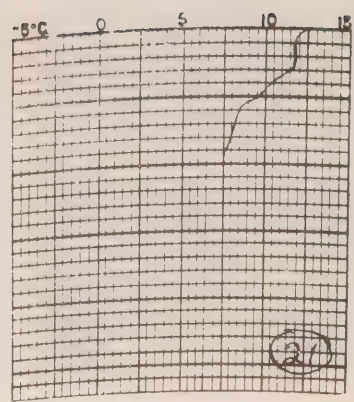
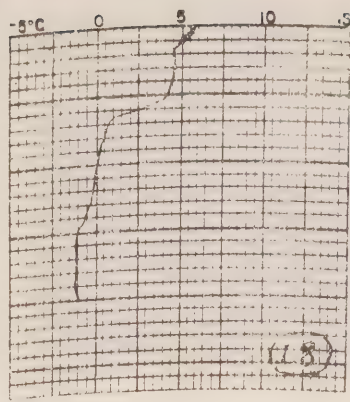
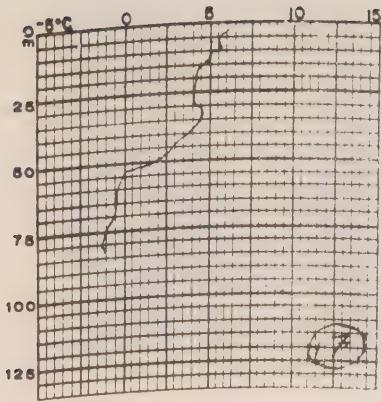
BATHYTHERMOGRAMS

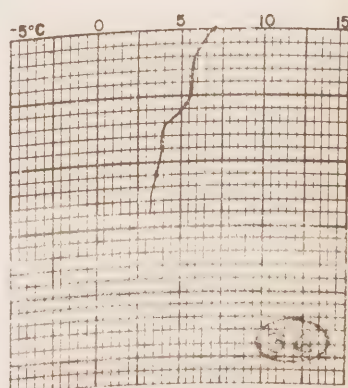
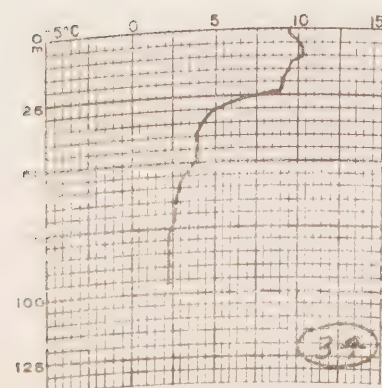
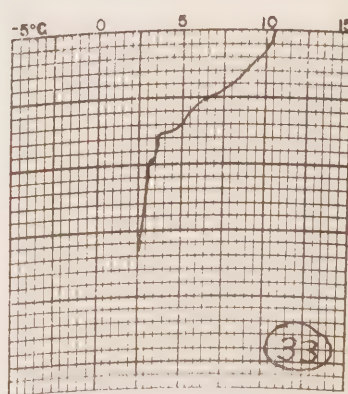
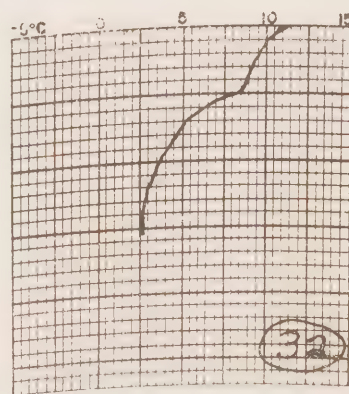
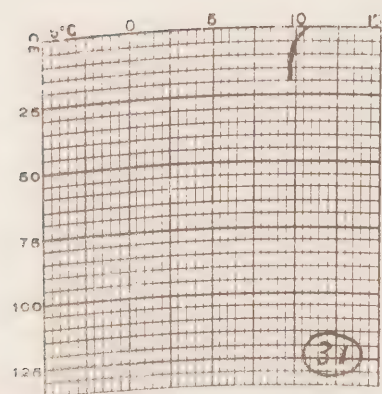
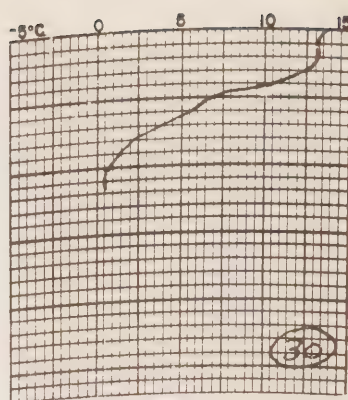
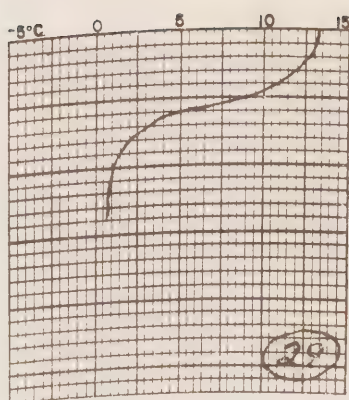
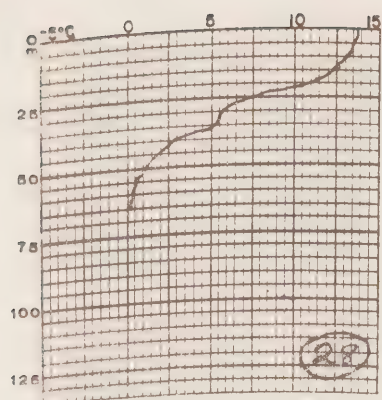


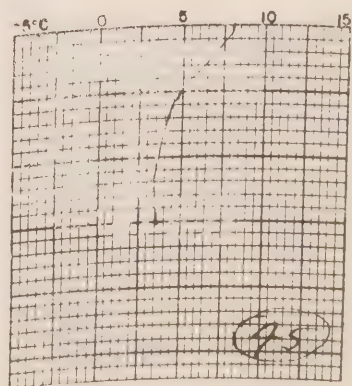
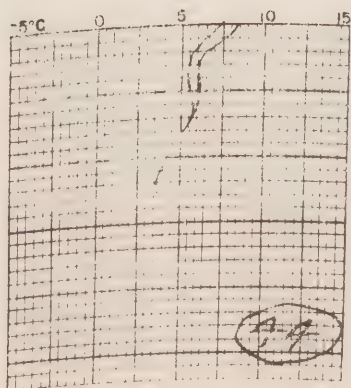
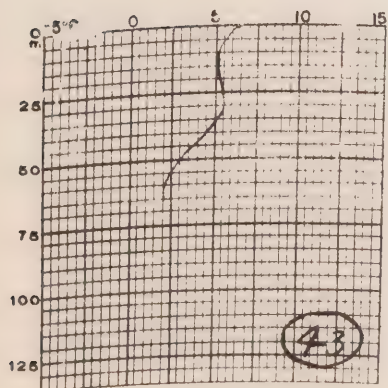
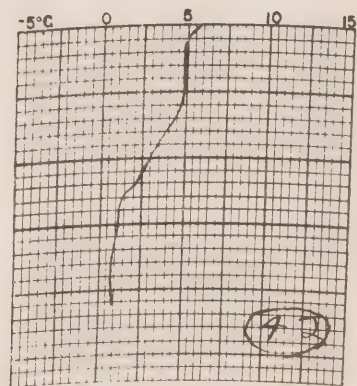
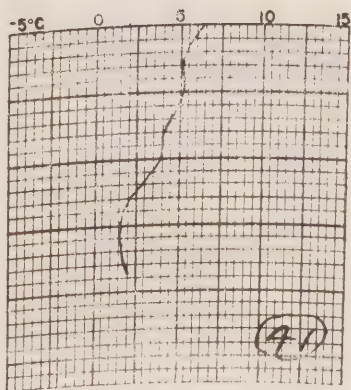
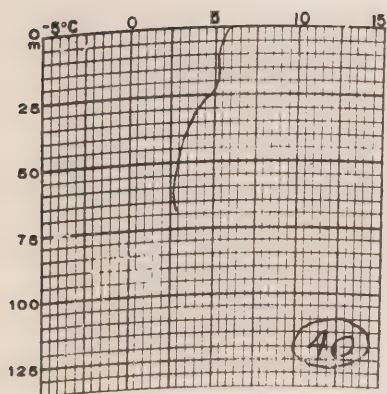
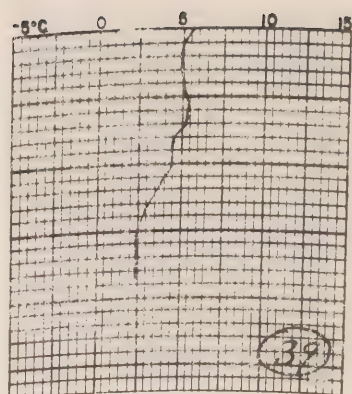
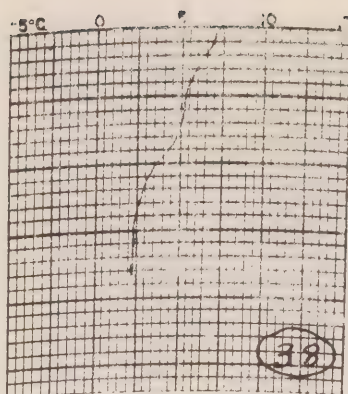
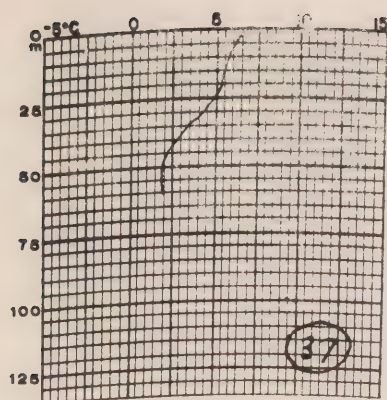
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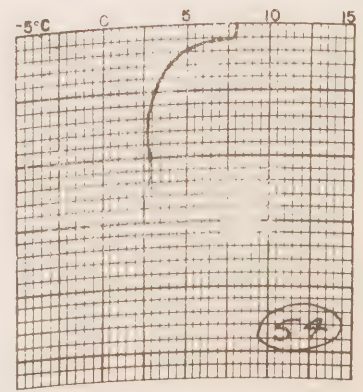
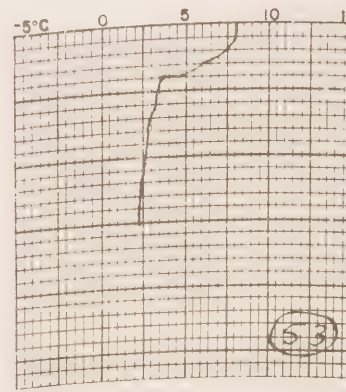
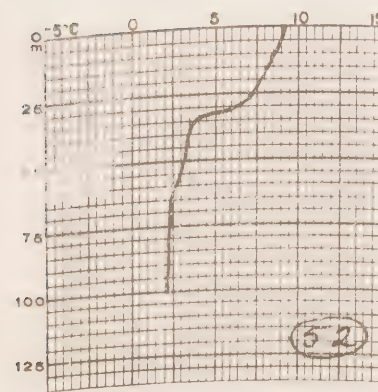
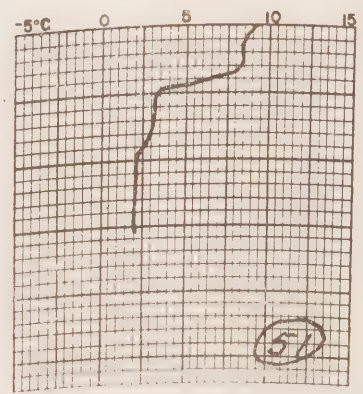
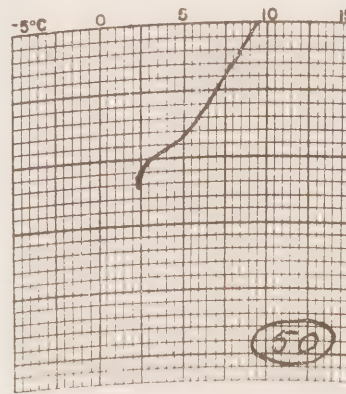
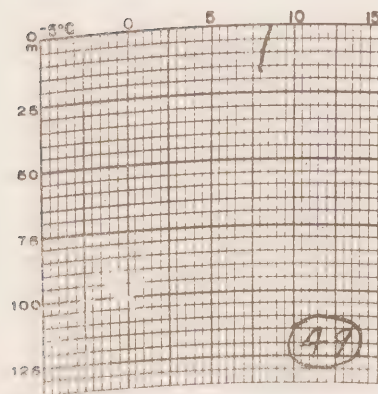
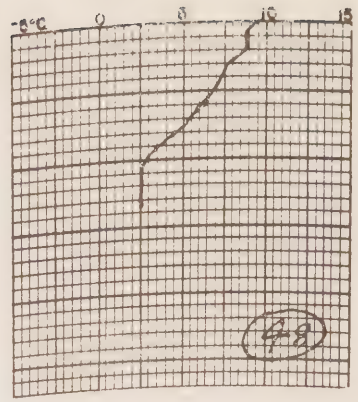
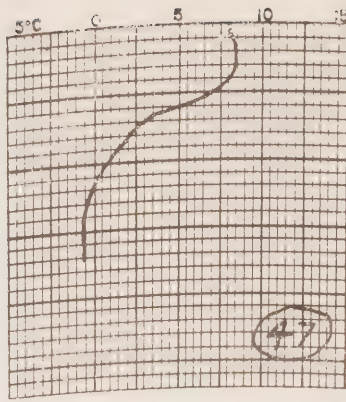
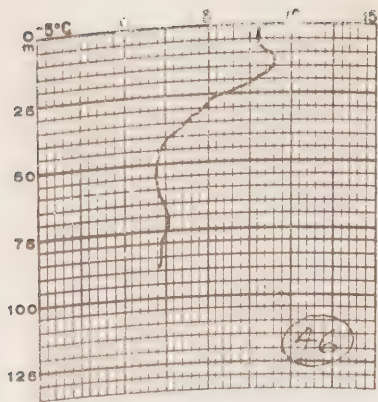


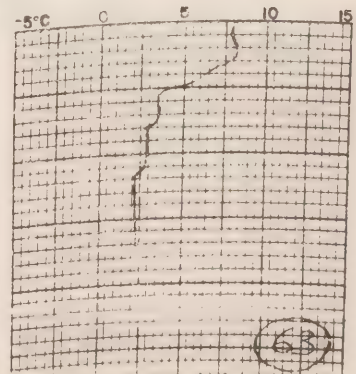
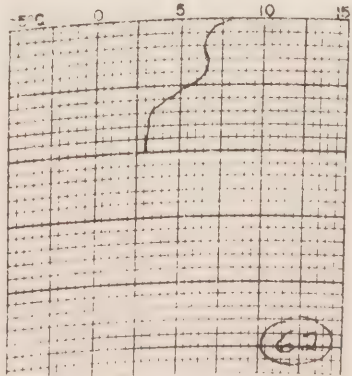
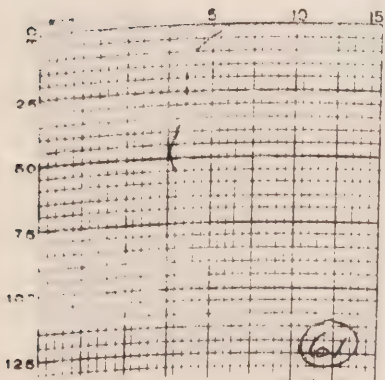
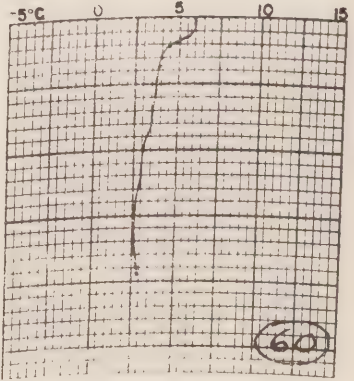
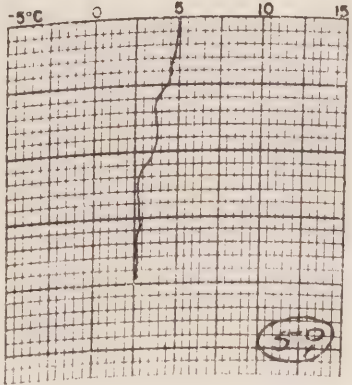
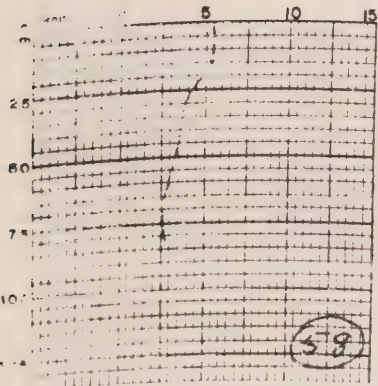
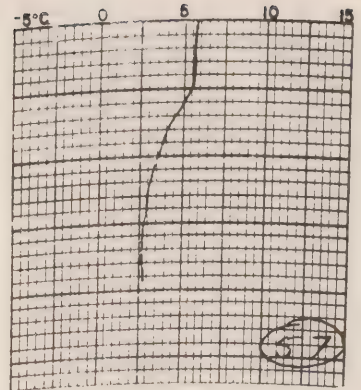
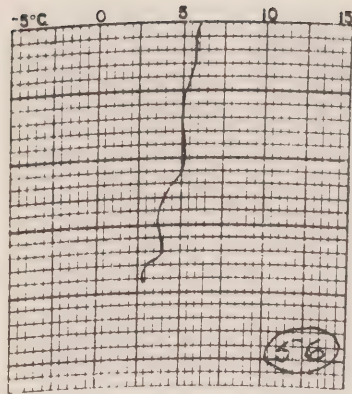
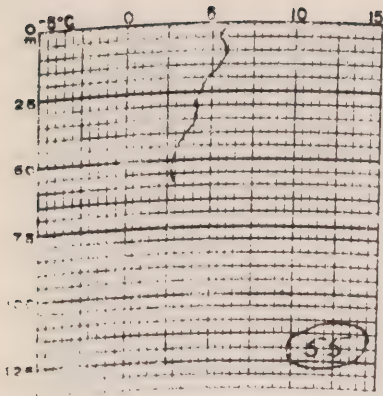


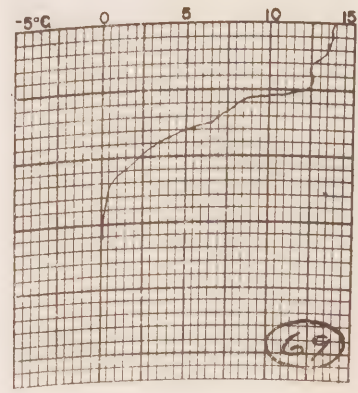
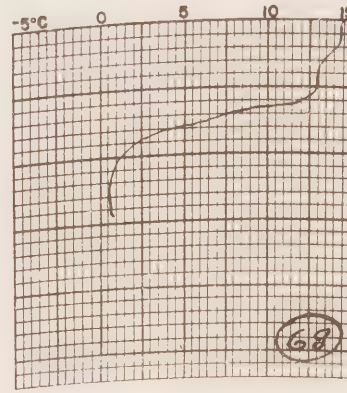
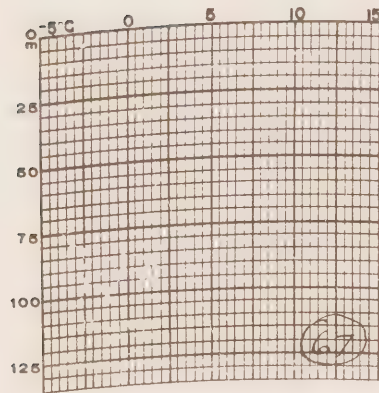
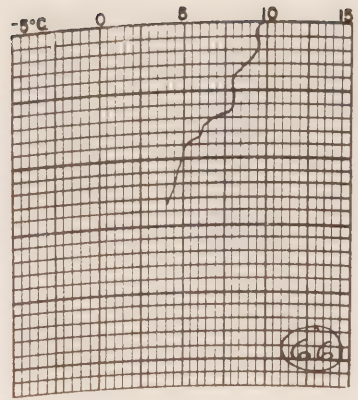
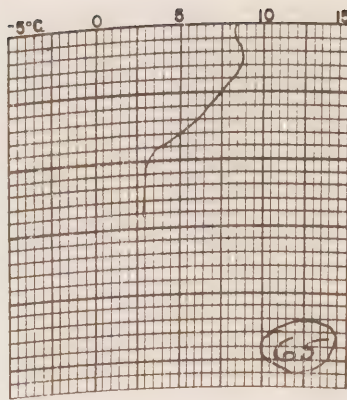
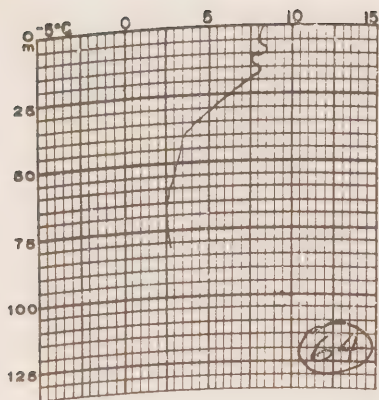




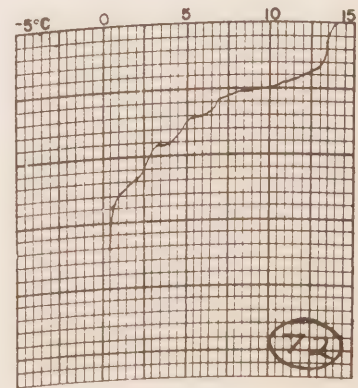
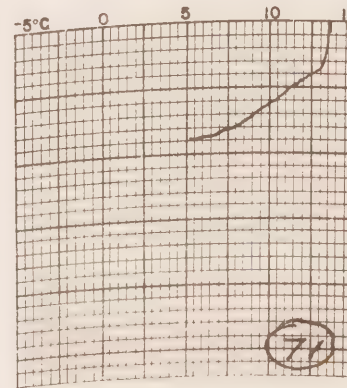
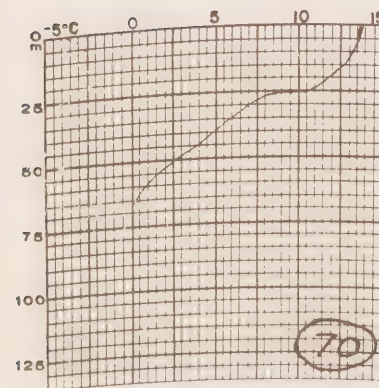


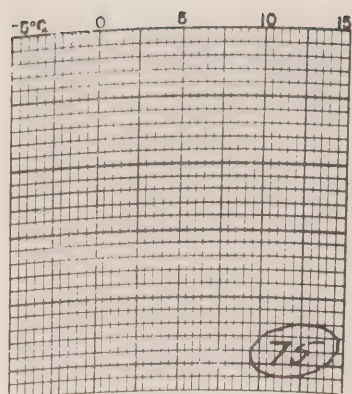
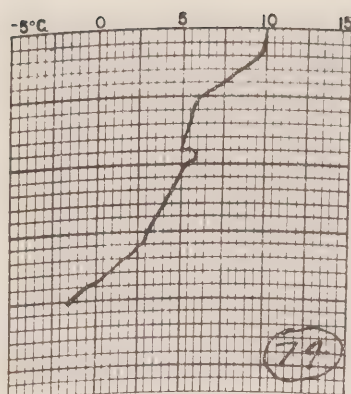
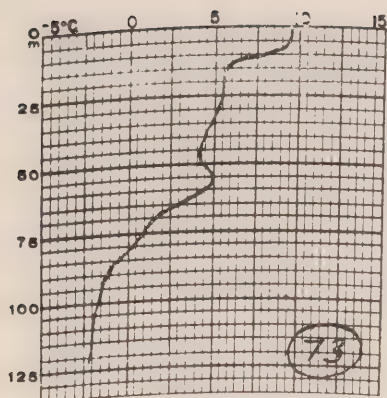




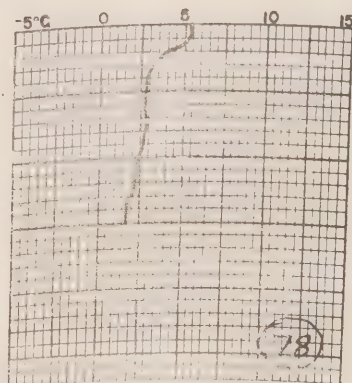
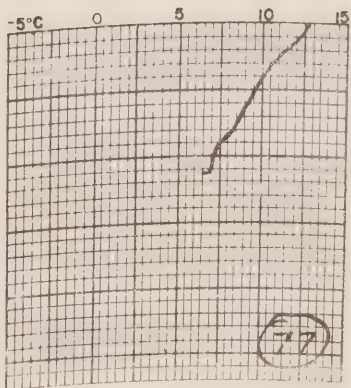
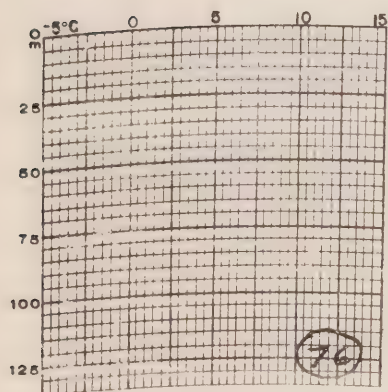


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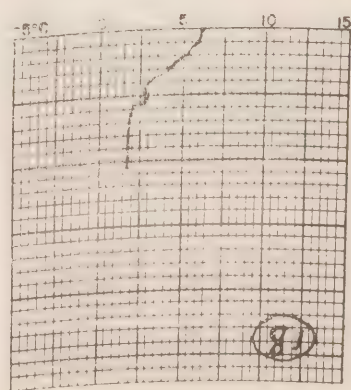
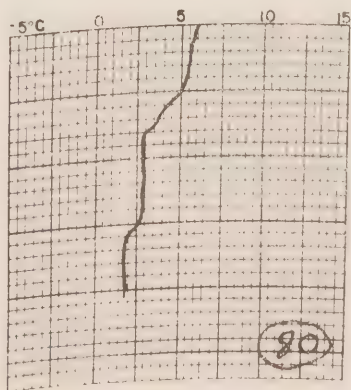
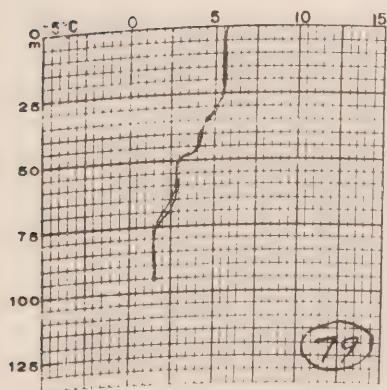


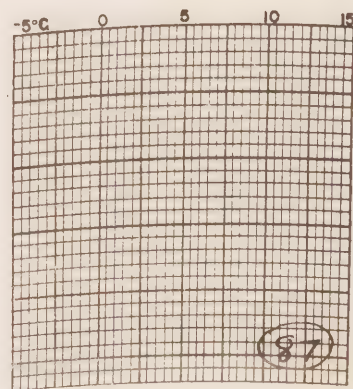
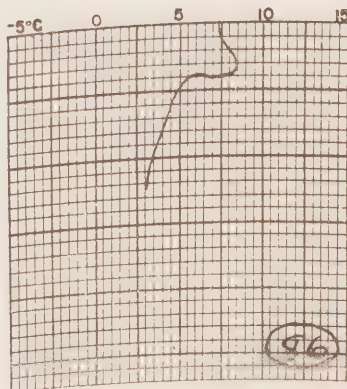
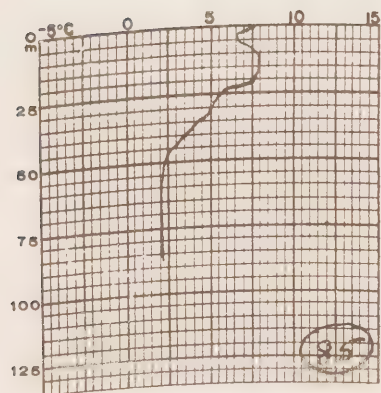
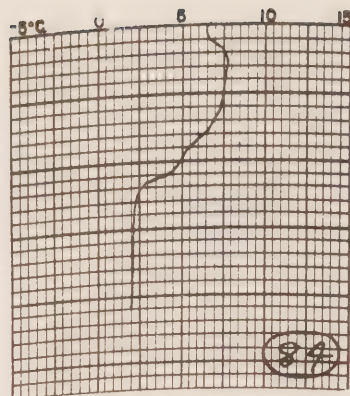
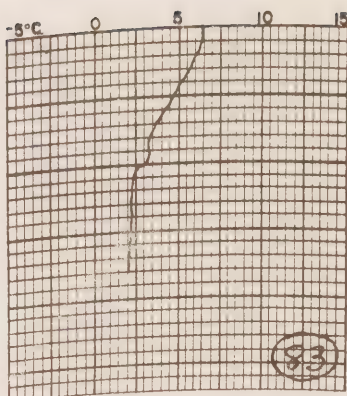
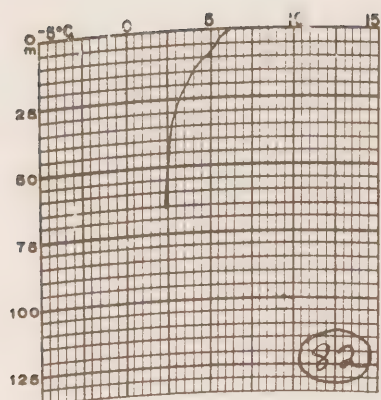


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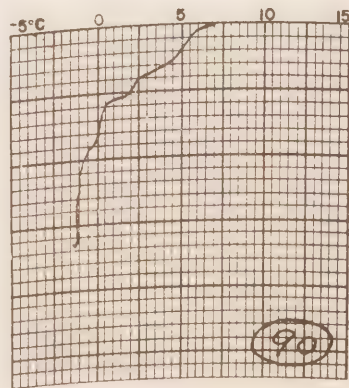
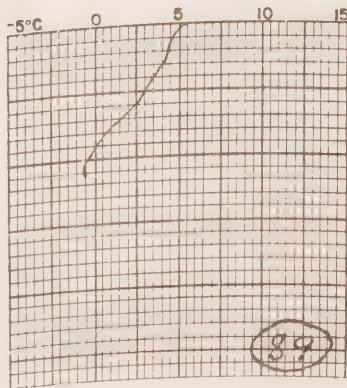
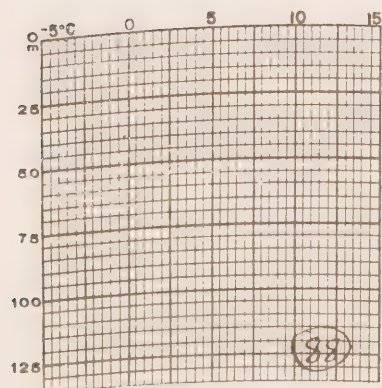


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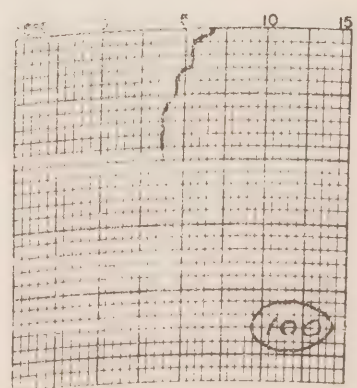
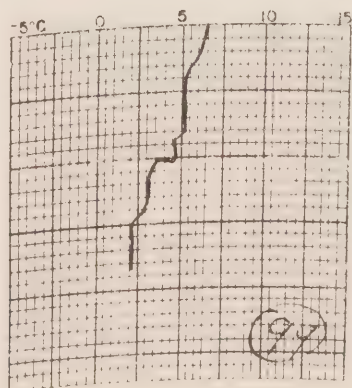
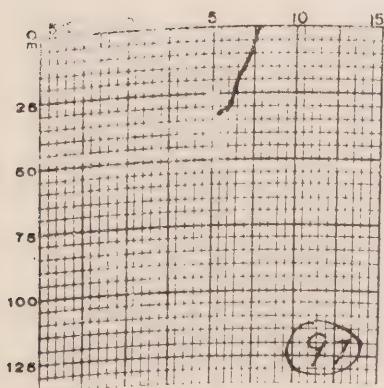
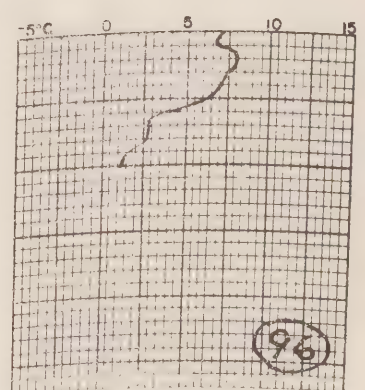
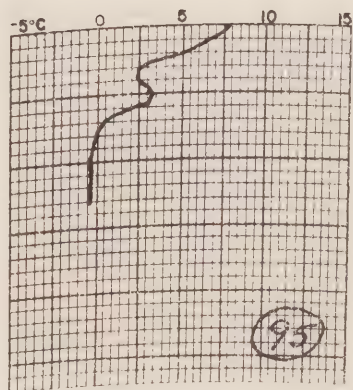
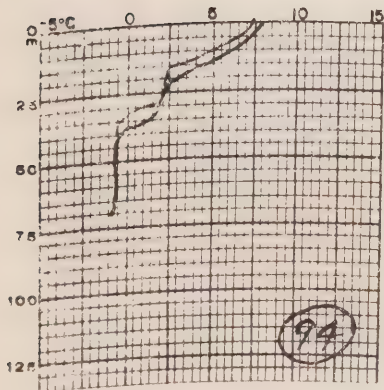
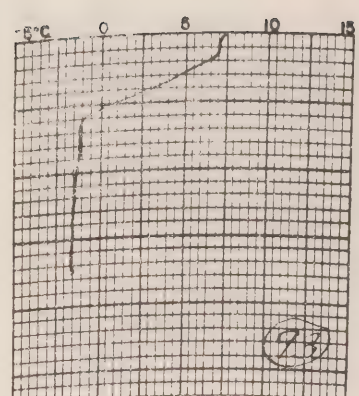
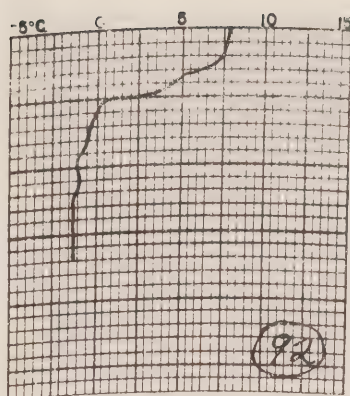
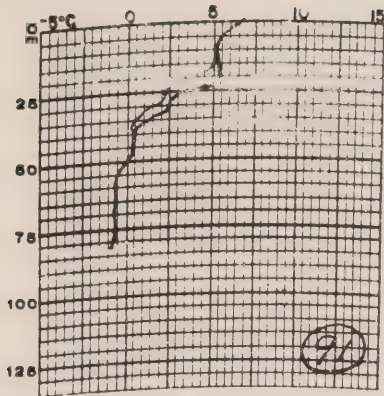


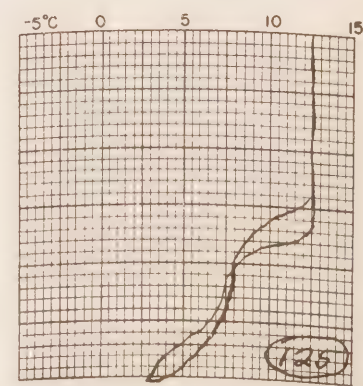
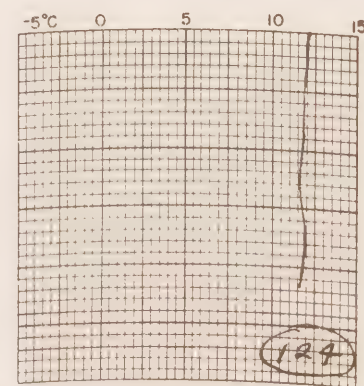
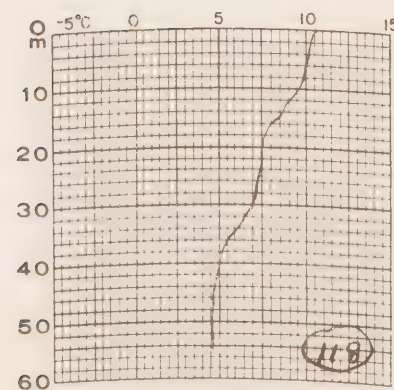
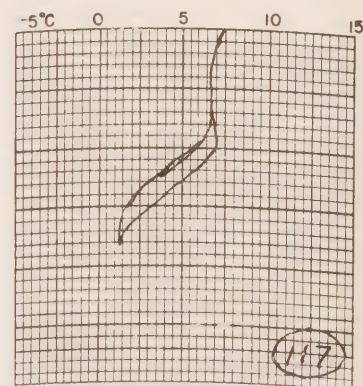
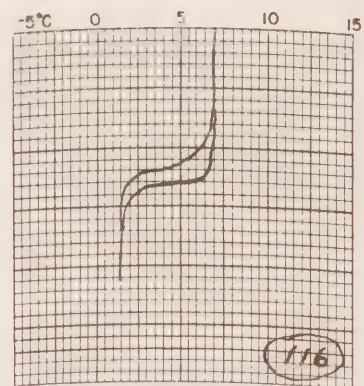
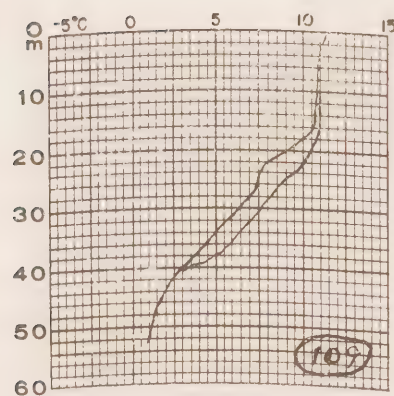
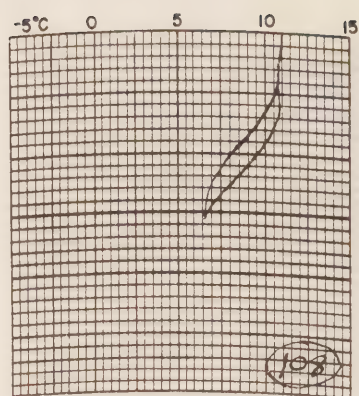
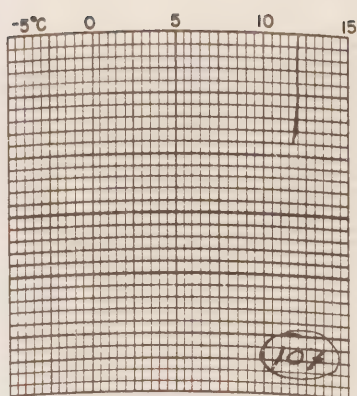
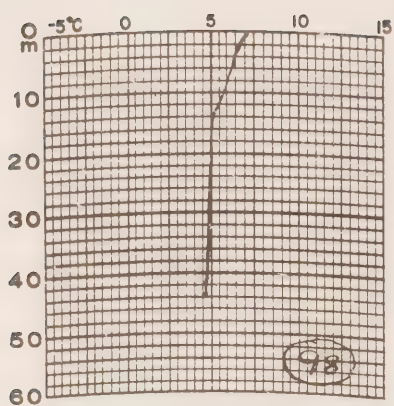


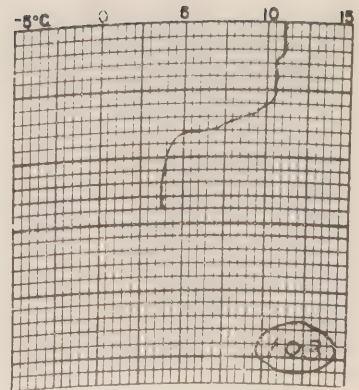
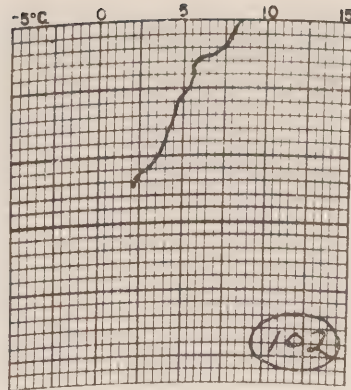
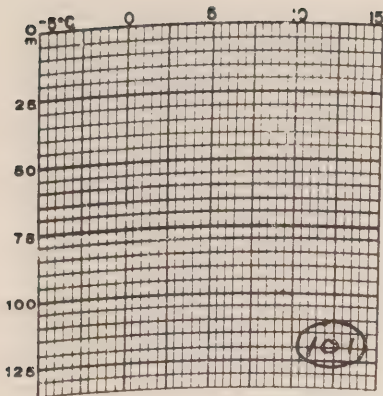
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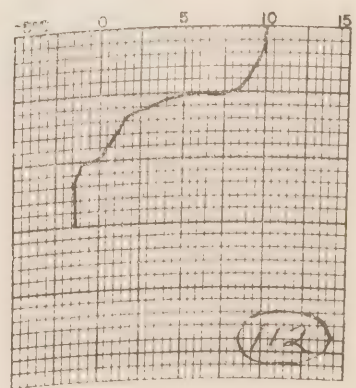
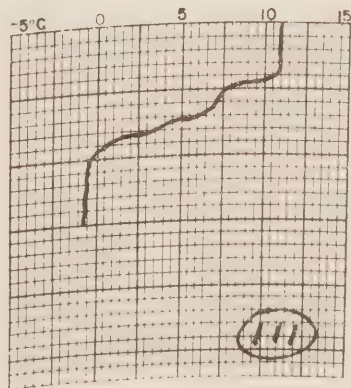
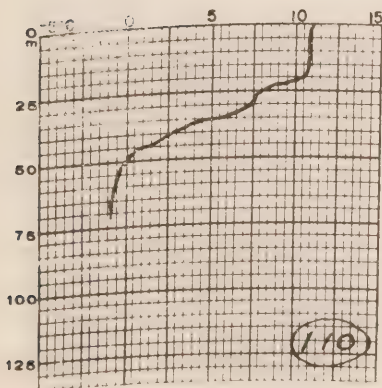
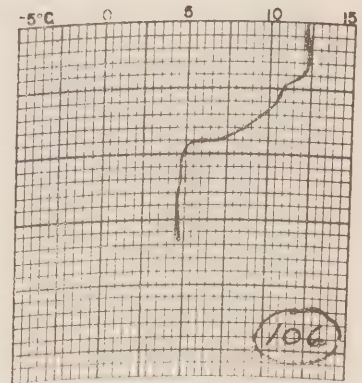
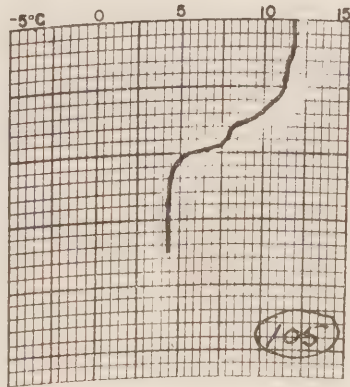
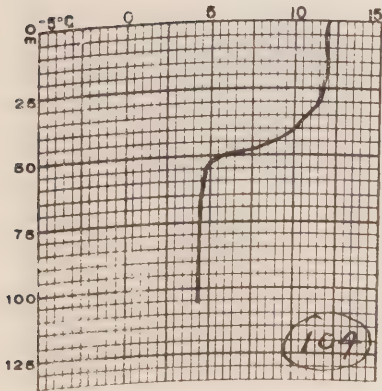
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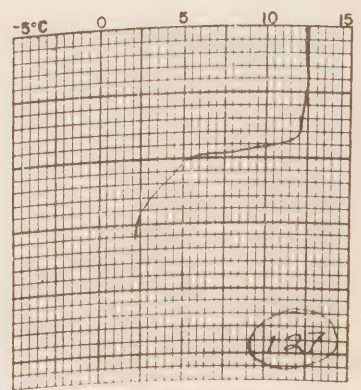
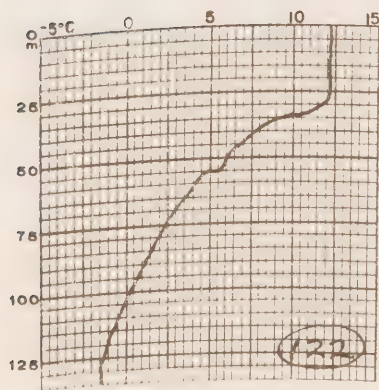
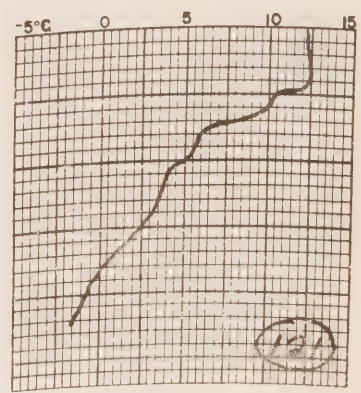
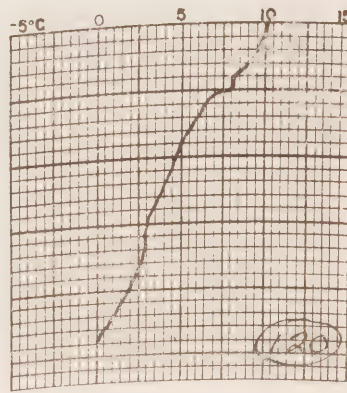
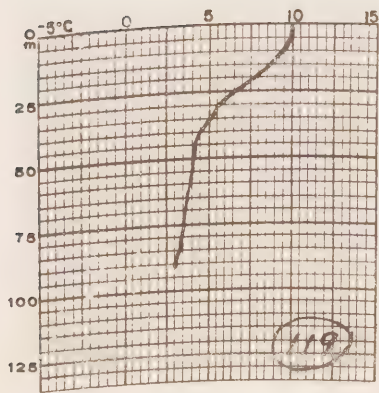
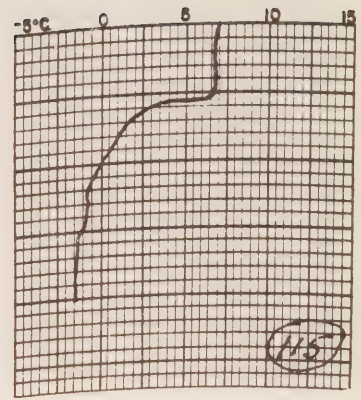
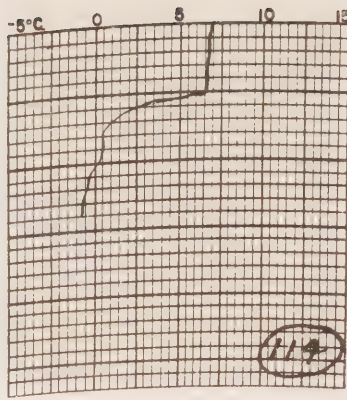
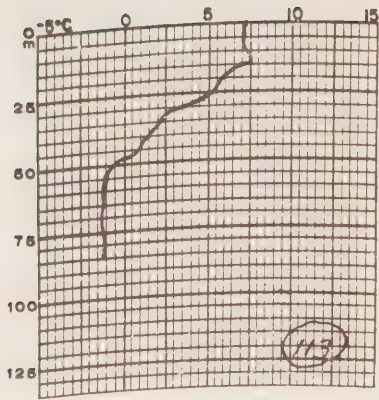


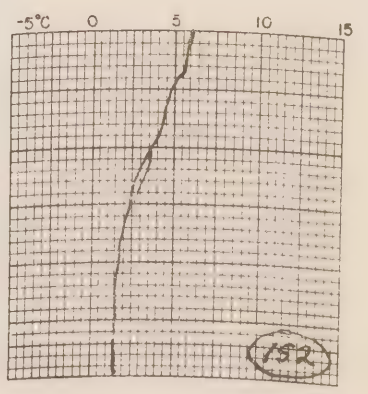
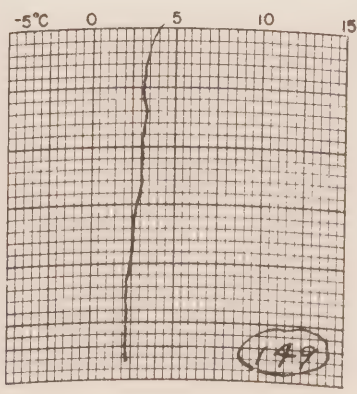
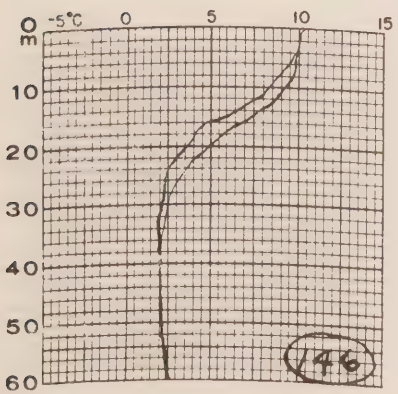
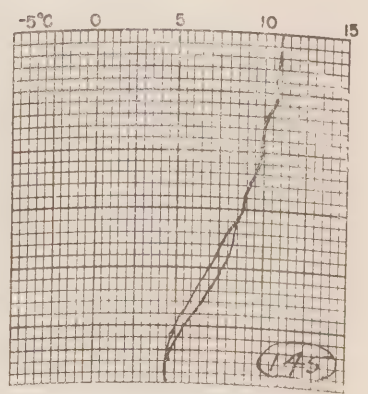
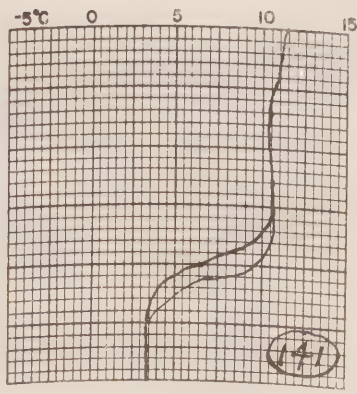
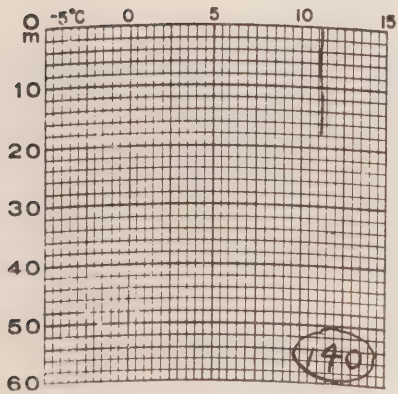
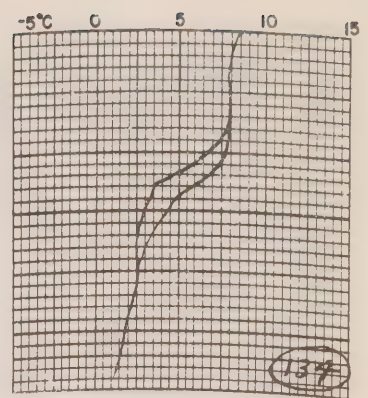
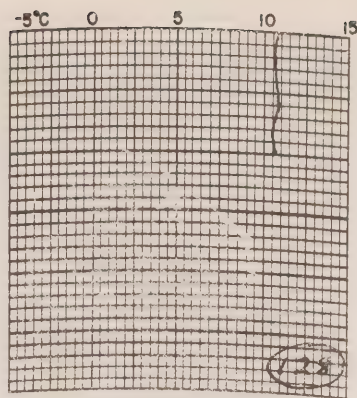
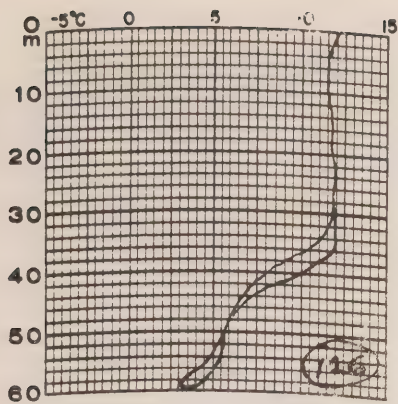


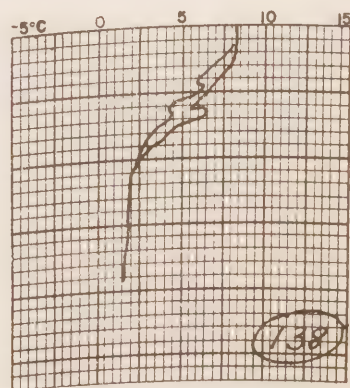
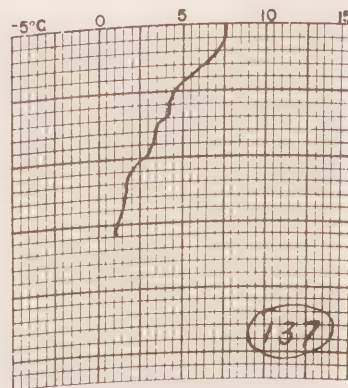
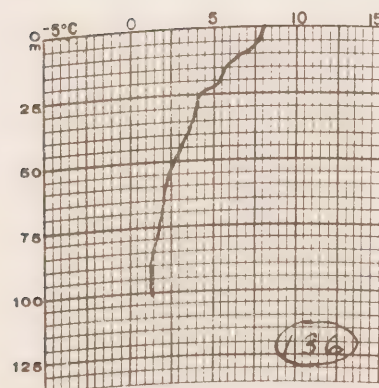
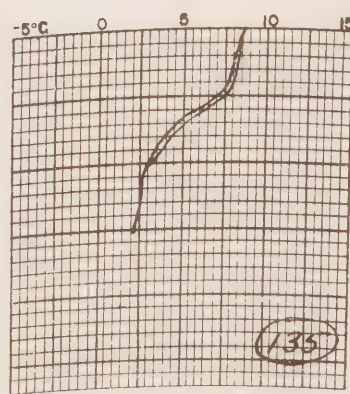
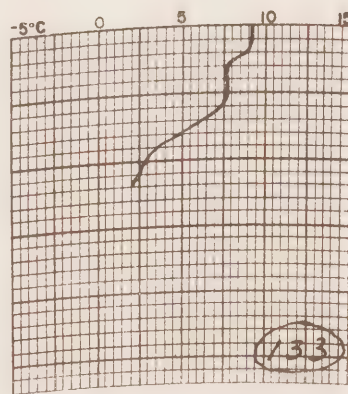
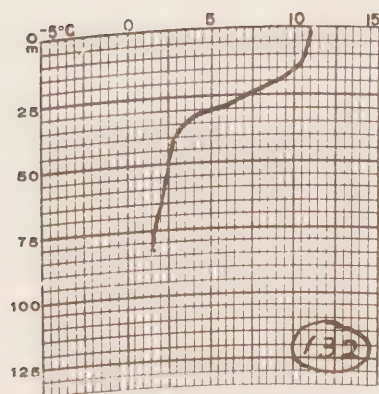
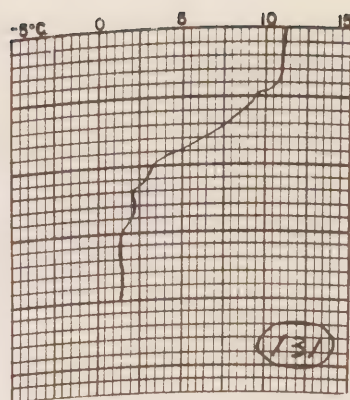
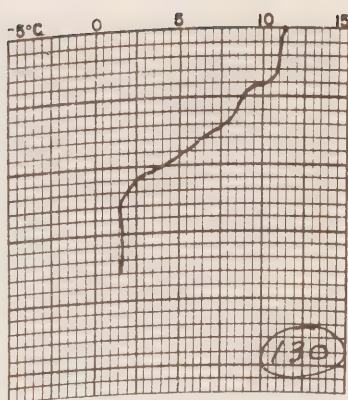
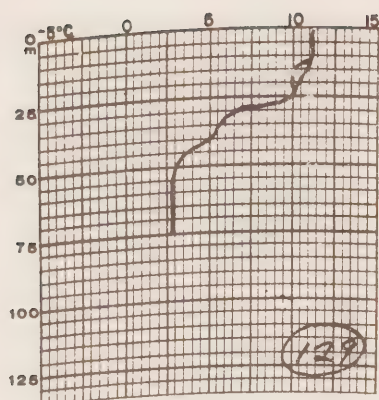


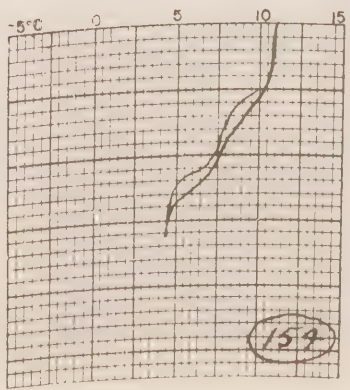
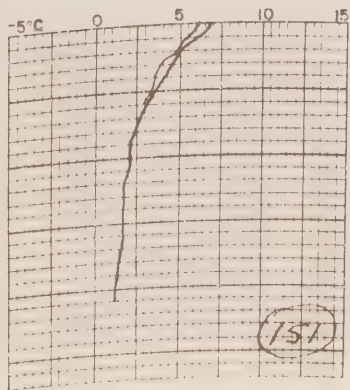
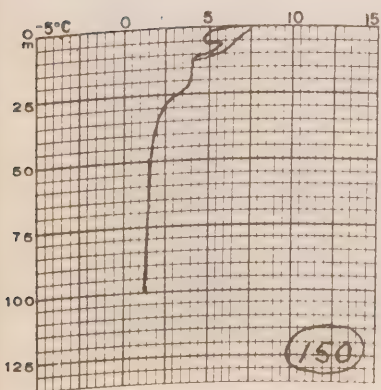
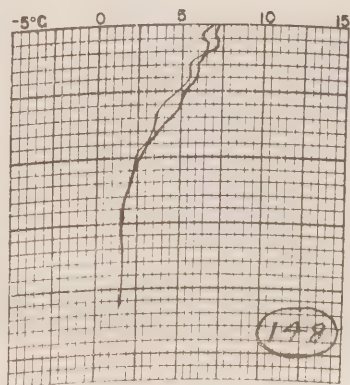
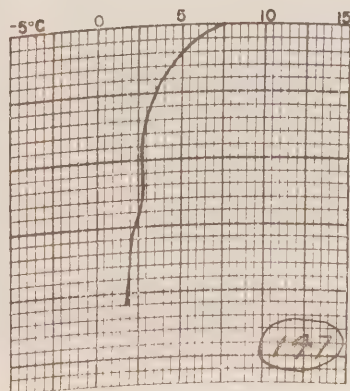
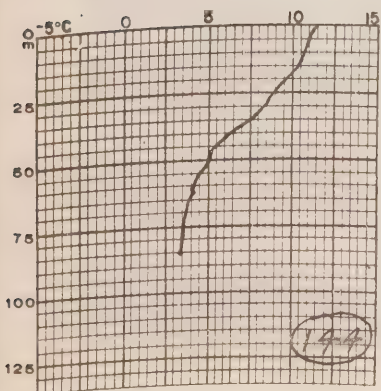
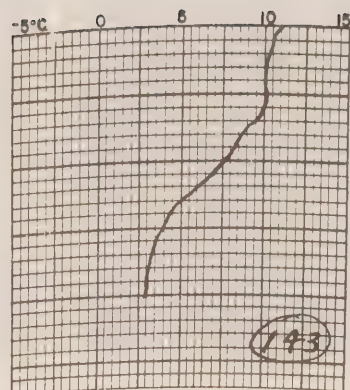
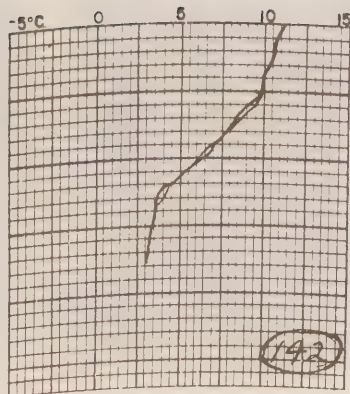
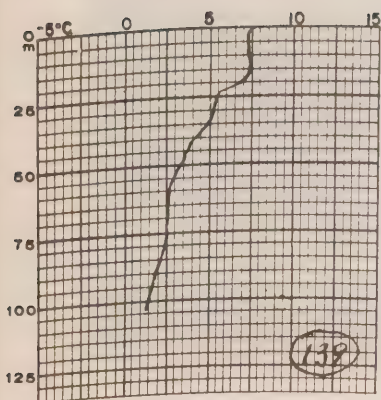
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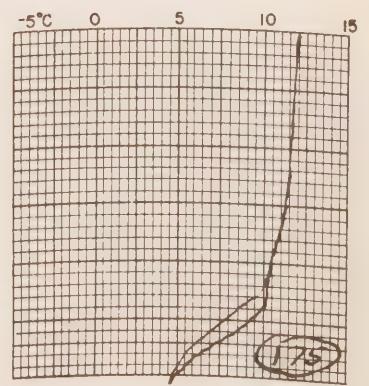
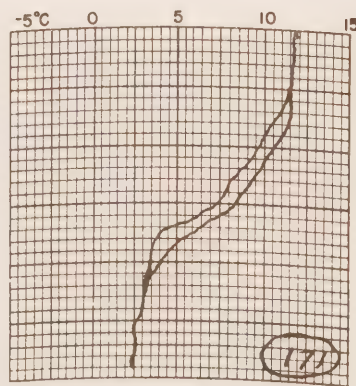
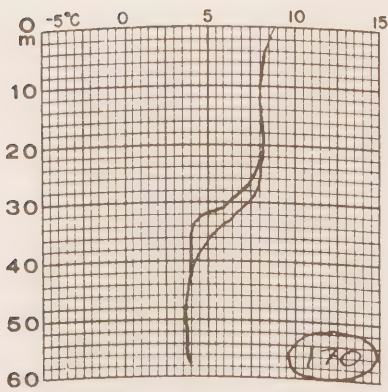
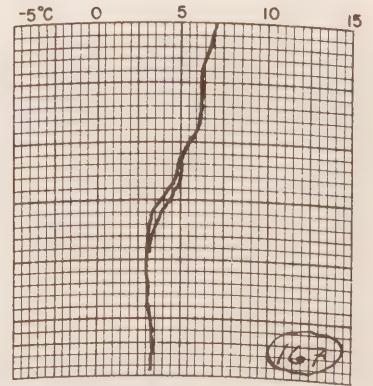
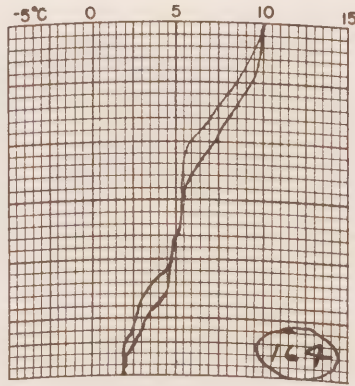
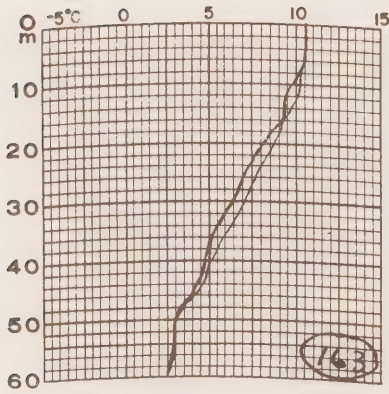
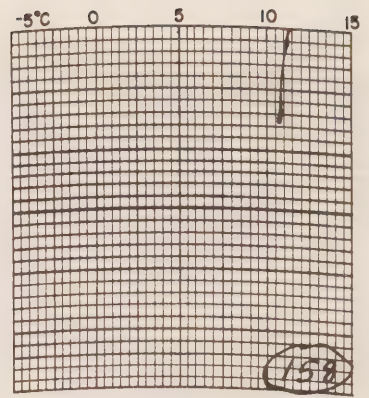
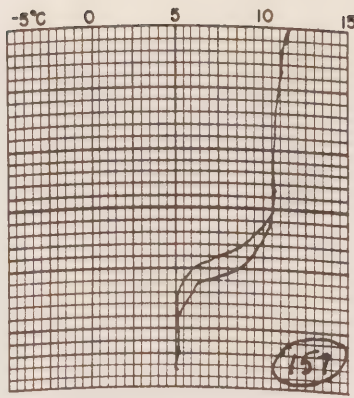
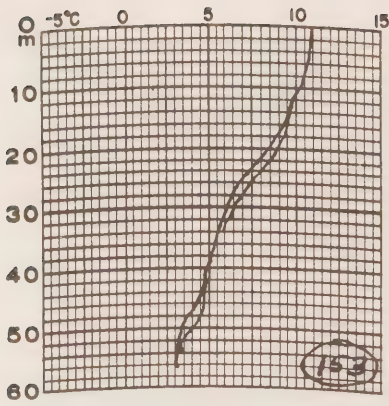


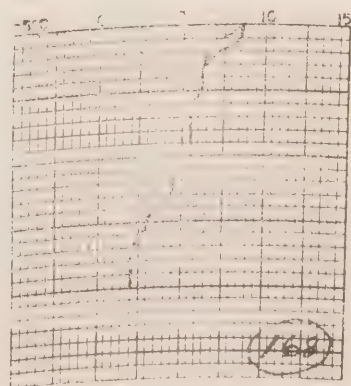
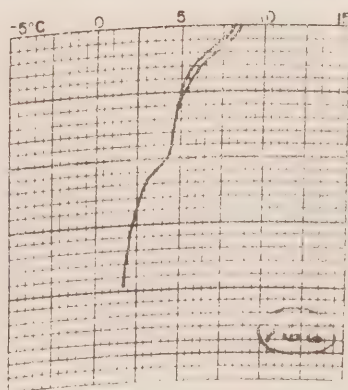
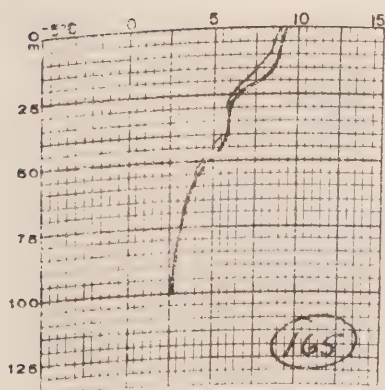
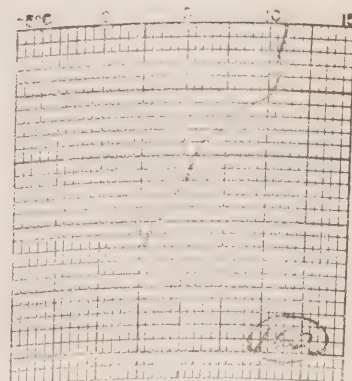
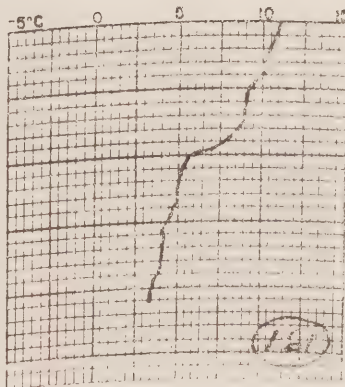
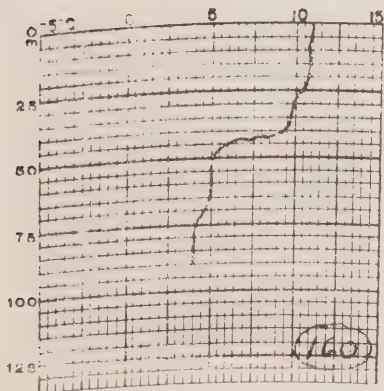
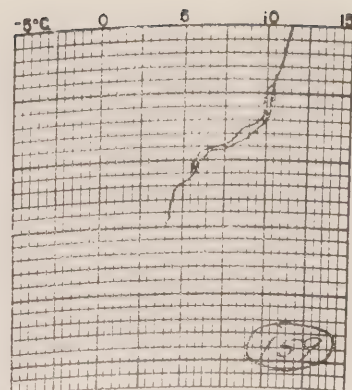
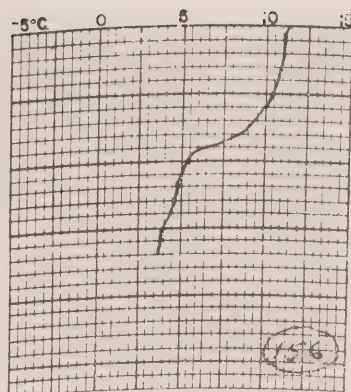
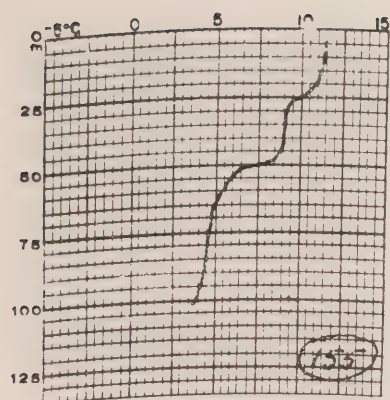


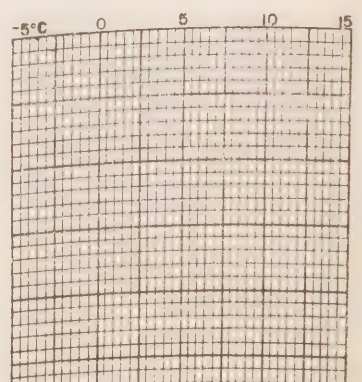
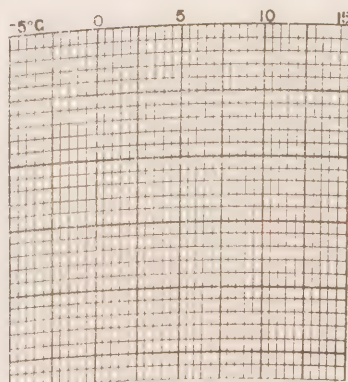
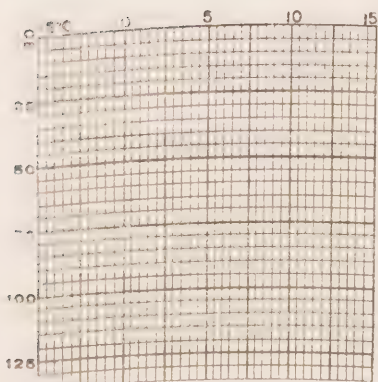
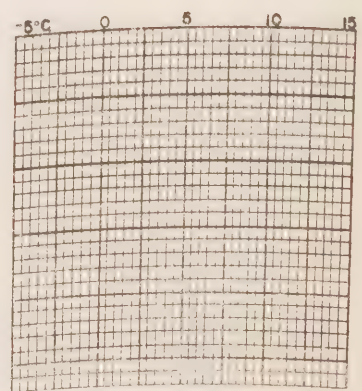
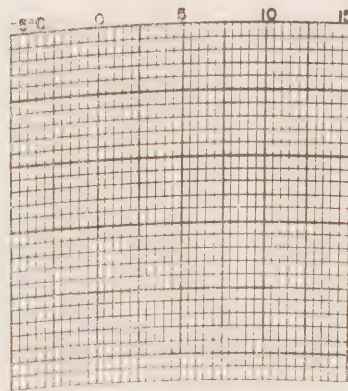
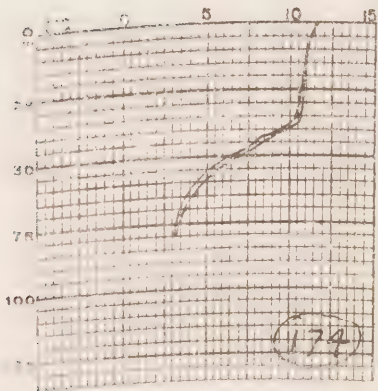
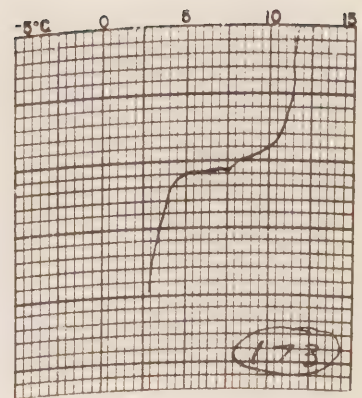
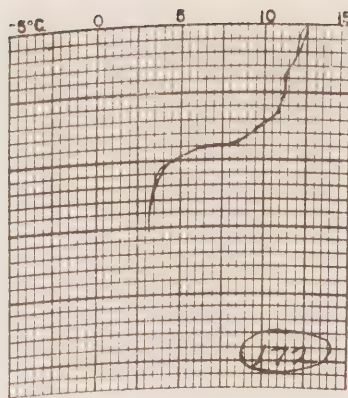
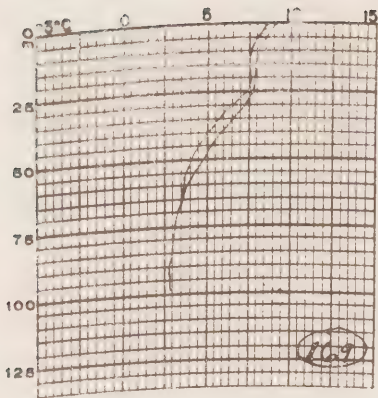


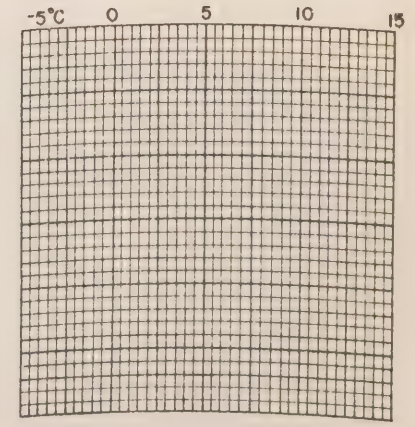
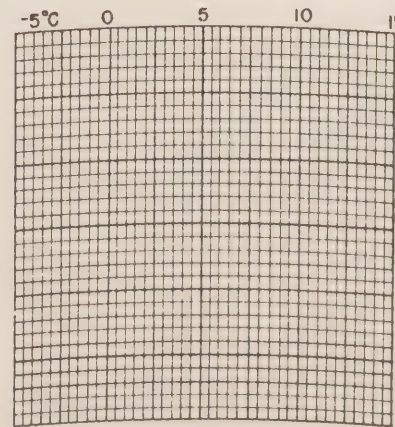
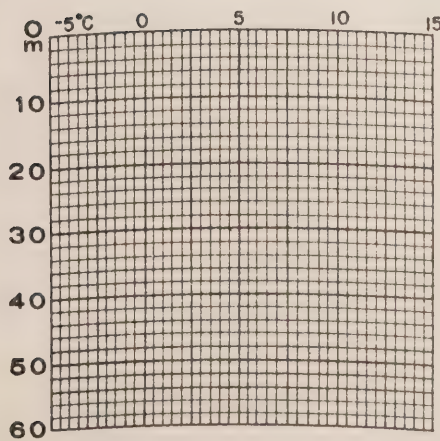
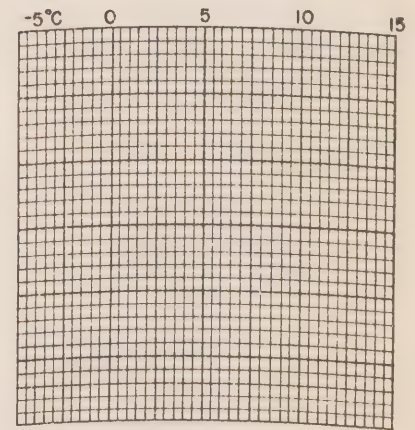
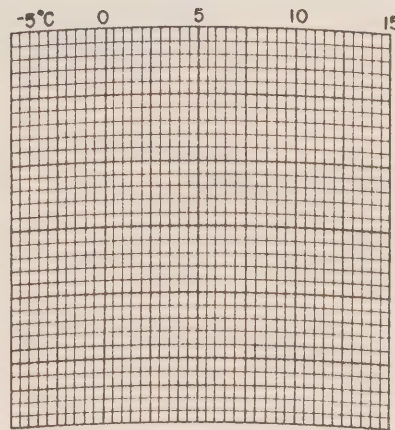
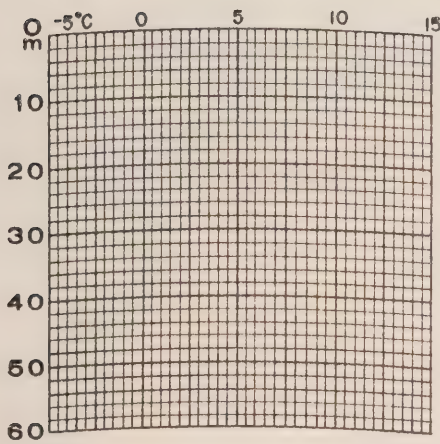
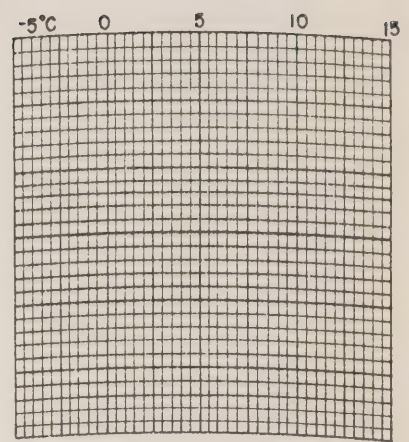
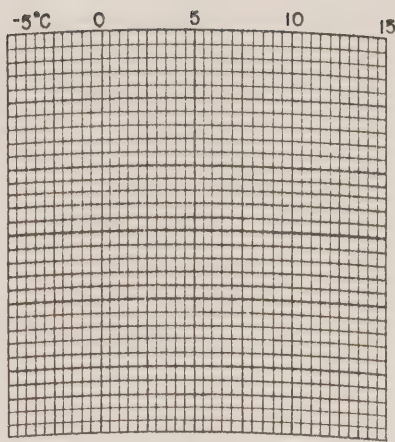
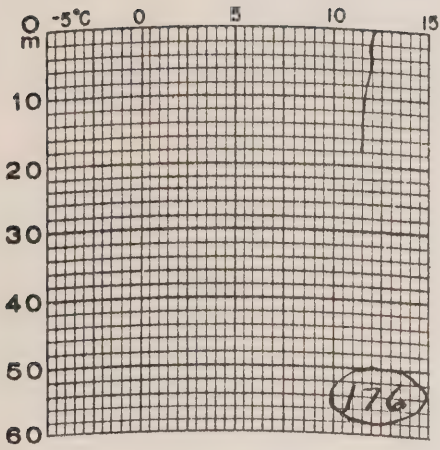












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CANADA

DATA RECORD
OCEAN WEATHER STATION "P"
NORTH PACIFIC OCEAN

August 7 to October 31, 1964

No. 7

1965 Data Record Series

Canadian Oceanographic Data Centre

Programmed by the
Canadian Committee on Oceanography

1965

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NORTH PACIFIC OCEAN

August 7 to October 31, 1964

CODC Reference: 02-64-007

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Canadian Oceanographic Data Centre
615 Booth St., Ottawa, Canada

Programmed by the Canadian Committee on Oceanography

FISHERIES RESEARCH BOARD OF CANADA

Ocean Weather Station "P" North Pacific Ocean

Ships: CCGS "St. Catharines" and CCGS "Stonetown"

Local Cruise

designations: P-64-3

Patrol No. 62

Cruise periods: Aug. 7 - Sept. 24, 1964 Sept. 22 - Oct. 31, 1964.

Observer: Mr. H. Wilde.

PACIFIC OCEANOGRAPHIC GROUP - Nanimos, B.C.

SECTION I

Description of data collection procedures



Figure 1.

The Canadian Weather Ship C.C.G.S. " St. Catharines " . (D.O.T. Photo)

The oceanographic winch is located on the starboard side of the signal deck, just aft of the bridge wing.

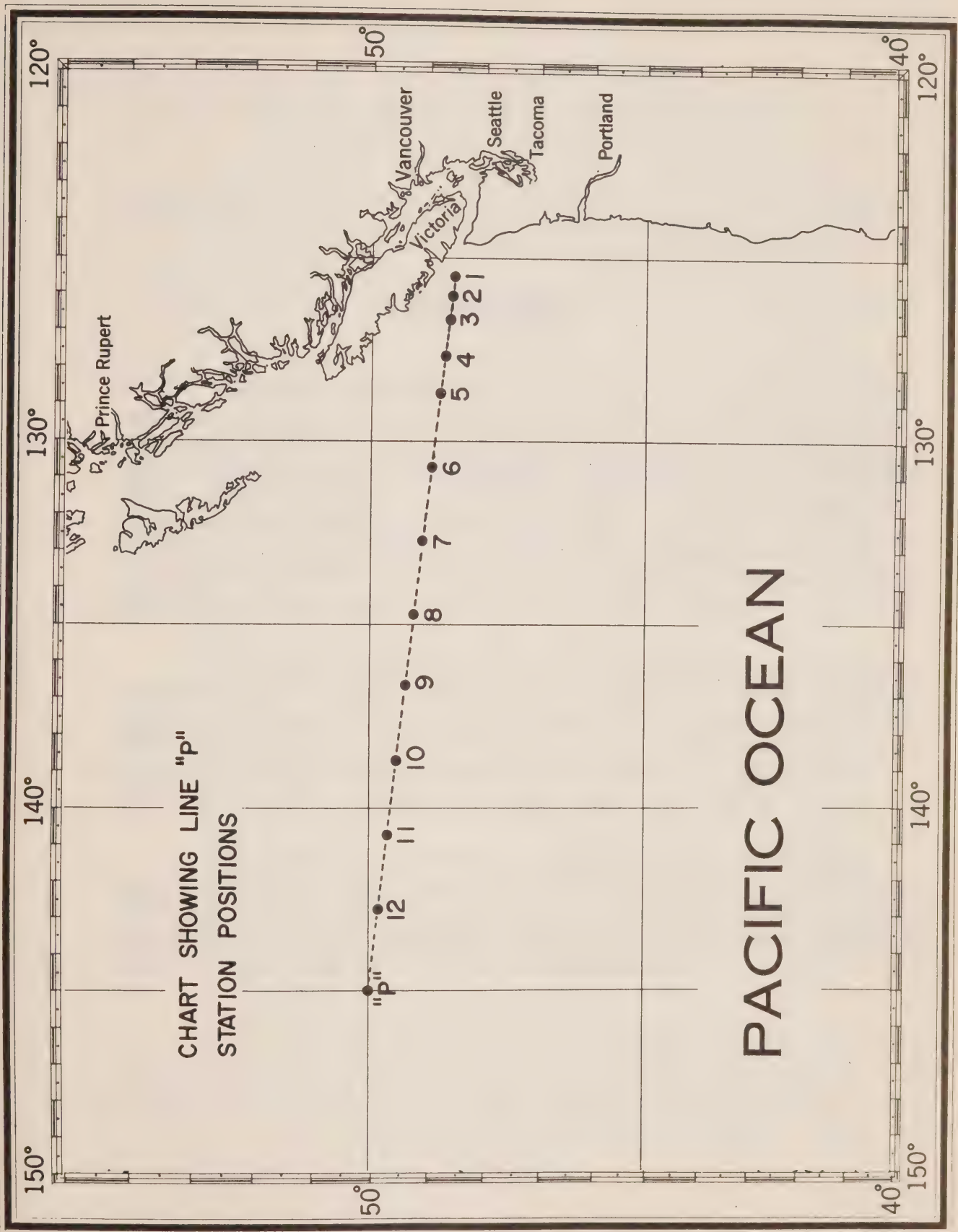


Figure 2.

The Canadian Weather Ship C.C.G.S. "Stonetown".

(D.O.T. Photo)

Bathythermograph soundings boom can be seen below the bridge on the signal deck.



INTRODUCTION

Canadian operation of Ocean Weather Station "P" (latitude $50^{\circ}00'N$, longitude $145^{\circ}00'W$) was inaugurated in December 1950. The Station is manned by two vessels of the Canadian naval frigate class operated by the Marine Services of the Department of Transport. They are the CCGS "St. Catharines" and the CCGS "Stonetown" Fig. 1 and 2 (Atlantic Oceanographic Group, MS, 1961). Each ship remains on Station for a period of 6 weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch. The chief purpose of the Station is to operate as a meteorological station for surface and upper-air observations, and as an air-sea rescue station.

Twice-daily bathythermograph observations have been made at Station "P" by the Pacific Oceanographic Group since July 1952. A program of more extensive oceanographic observations at Station "P" was commenced in August 1956. Since April 1959 a series of ten oceanographic stations has been frequently observed along the route to and from Station "P" and Swiftsure Bank. This number was increased to 12 in August 1964 (Fig. 3).

The CCGS "St. Catharines" is equipped with deck and laboratory facilities required to make oceanographic observations. Oceanographers from the Pacific Oceanographic Group accompany the ship on each patrol. The CCGS "Stonetown" is equipped with bathythermograph sounding equipment, and the BT observations are made by members of the ship's crew.

CRUISE LOG, CCGS "ST. CATHARINES", SURVEY P-64-3

- August 7: ship departed from Esquimalt, B. C. for Ocean Weather Station "P"; 4 oceanographic stations observed along Line "P", but further work was cancelled due to a winch breakdown.
- August 10: rendezvous with CCGS "Stonetown", and commenced twice-daily BT observations.
- August 15: replacement part for winch received by air-drop from U.S. Navy aircraft.
- August 17: first oceanographic station at Station "P" observed; normal Station oceanographic routine commenced.
- September 1: commenced special series of 1/2-hourly BT casts to 75 m for 24-hour period.
- September 21: relieved by CCGS "Stonetown", and proceeded on return trip to base. 12 oceanographic stations observed on Line "P".
- September 24: berthed at Esquimalt, B. C.

Sixteen oceanographic stations were observed on Line "P", and 13 were observed at Station "P" - 6 to 400 m, 1 to 600 m, 3 to 2000 m, 1 to 3500 m, and 2 to 4200 m. Dissolved oxygen determinations were made at the 13 stations. BT casts to 275 m depth were made at each 40' of longitude along Line "P", as well as at each oceanographic station and at 1700 GMT daily on Station "P". Casts to 135 m depth were made at 0200 GMT daily on Station "P". A surface salinity sample was collected at every Line "P" cast and at the 0200 cast on Station "P". BT casts to 135 m for OCEAN series information (Giovando, MS, 1962) were made on 15 days at Station "P".

Vertical plankton hauls from 150 m were made on 16 days; 2 hauls were made from 1200 m depth, and one from 4000 m. Surface horizontal tows were made at the beginning, middle and end of the patrol. Ocean productivity measurements of photosynthesis (C_{14} method) and of plant pigment concentrations were made on surface samples collected on 16 days.

It is of interest to note that the ship's crew caught 300 pomfret during the patrol.

CRUISE LOG, CCGS "STONETOWN", PATROL NO. 62

- September 18: departed Esquimalt for Ocean Weather Station "P"; 3 OCEAN series observed en route, but no regular BT observations made.
- September 21: relieved CCGS "St. Catharines" on Station "P", commenced regular twice-daily BT casts.
- October 6: left Station "P" and proceeded full speed to Esquimalt base with sick crew member.
- October 12: returned to Station "P" and commenced patrol again. Adverse weather conditions seriously hampered the BT observations routine.
- November 2: relieved by CCGS "St. Catharines" and proceeded on the return journey. No BT observations were made en route.
- November 5: secured at Graving Dock, Esquimalt, B.C.

Twice-daily observations at 0200 and 1700 GMT were made on 22 days at Station "P". For the first 5 days the 0200 cast was made to 110 m and the 1700 cast to 200 m, but subsequent observations were all to 200 m. Every day the ship was on Station a surface salinity sample was collected at 0200 GMT OCEAN series observations to 110 m depth were made on 15 days.

OBSERVATION PROCEDURES

1. Samples at depth were obtained with Nansen reversing water samplers. Stations to 400 m were observed in one cast, whilst deeper stations were observed in 2 casts - the first to 400 m, and the second from 500 m to the deepest sampler.
2. Seawater temperatures (except 0 m) were measured by German or Japanese manufactured protected reversing thermometers. Two thermometers were used at all depths except 20, 30, 75, 125, 175 and 250 m, where only one thermometer was used. Unprotected reversing thermometers were used on all samplers from 300 m to the deepest sampler in the first 12 stations, and from 400 m to the deepest in the remaining stations.
3. Surface samples for salinity and dissolved oxygen determinations were obtained in a one-gallon plastic bucket. The surface temperature was mea-

sured in this sample with an armoured thermometer graduated in 0.5 C° intervals.

4. Water transparency observations were made with a white secchi disc of 30 cm diameter.

5. Station locations were determined by the officer of the watch, who also made the meteorological observations reported with the oceanographic data.

LABORATORY PROCEDURES

The salinity determinations of the oceanographic station samples and the 0200 surface samples collected during Survey P-64-3 were made with an inductive salinometer, Model 601 MK III, manufactured by Auto-Lab Industries Pty. Ltd., Sydney, Australia (Brown and Hamon, 1961). The samples were analysed on board ship. The salinity data are the means of duplicate determinations whose "conductivity ratio" values fell within an acceptable range. The accuracy of the determinations at the 35 ‰ salinity level is stated to be $\pm .003\%$ (Brown and Hamon, 1961). The 0200 surface samples collected during the "Stonetown" Patrol No. 62 were analysed in the shore laboratory using the MK III conductivity salinometer (Strickland, MS, 1958).

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Strickland and Parsons, 1960).

The ocean productivity measurements were made according to the methods described by Strickland (1960). Results will be reported later in a publication of the Fisheries Research Board.

SPECIAL NOTE RE SALINITY DATA

The salinity values for depths 1500 to 3500 m in Consecutive 021, for all depths in Consecutive 022, and for depths 0 to 30 m in Consecutive 023 are reported to 3 decimal places with a '0' digit in the third place, but they only have an accuracy of $\pm 0.01\%$. These salinity values are not as accurate

as the others because a salinity correction factor which is a routine requirement of the inductive salinometer method was not determined during the analysis of these water samples. The '0' digits have been added to these values to facilitate computations by the Oceans II program.

SURFACE SALINITY DATA

These are presented in a table listing the date-time, position, and salinity values. The data for the CCGS "St. Catharines" Survey P-64-3 are considered to have an accuracy of $\pm 0.003\%$ (Brown and Hammon, 1961). The CCGS "Stonetown" Patrol No. 62 data are from a single determination, and have an accuracy range of $\pm 0.009\%$ at the 95% probability level (Strickland, MS, 1958).

BATHYTHERMOGRAPH DATA

The BT traces have been drawn on standard pre-printed graphs resembling BT calibration grids of several depth ranges. The slides were positioned on the appropriate calibration grid in an adjustable holder. The BT traces were aligned on the grid using a temperature value obtained from a thermograph recording of the engine-room intake temperature. The top of the trace was always aligned with the zero-depth grid line.

The bathythermograms are arranged in a chronological order in 3 sections for each ship; the first section presenting the 135 m casts, the second the 275 m casts, the third the OCEAN series casts. The date-time (GMT) and position information are listed below each bathythermogram. BT observations made at oceanographic stations are identified by an asterisk (*) preceding the date-time group. Only one of the 8 slides in each OCEAN group is reproduced as a bathythermogram. This trace is considered to be representative of the group. The date-time information is that of the particular slide, but the position co-ordinates are those of the last slide in the group.

BOTTOM SAMPLES OBTAINED DURING SURVEY P-64-1

Two bottom samples were obtained at Station "P" by a small mud snapper during Survey P-64-1 (CODC Ref. No. 02-64-001) at Stations 015 (Mar. 17) and 018 (Mar. 25). The depth was approximately 4200 metres. The samples were analysed by Mr. J. W. Murray at the Institute of Oceanography, University of B.C. The sediment colour when moist varied from dark yellowish brown (10 YR 4/2) to dusky yellowish brown. The bulk of the sediment was in the silt size range (1/16 mm to 1/256 mm) but also contained appreciable quantities of very fine sand and clay sized material. In summary, he described the samples as consisting of "a very fine textured terrigenous sediment containing abundant remains of silicious organisms, mainly diatoms with lesser numbers of radiolarian".

PERSONNEL

The oceanographer on board CCGS "St. Catharines" during Survey P-64-3 was Mr. H. Wilke. The ship's master was Captain A. A. R. Dykes. The officers and crews of both weatherships took the regular twice-daily BT casts, and assisted in making the oceanographic observations. Assisting in the preparation of the data for computation and presentation in the data record were: Messrs. D. G. Robertson, H. J. Hollister, H. Wilke, and J. Wong.

SECTION II

Description of the machine-generated data record

21 INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "**estimate of precision**" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** (σ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e., $1\sigma = A$, $2\sigma = B$, etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "**interpolation error estimate**" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T , S , O_2) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "**measurement error estimate**" comprises the "**combined measurement and interpolation error estimate**". It is expressed as a multiple of the standard deviation of measurement (σ) under normal routine field conditions by:

CANADIAN OCEANOGRAPHIC DATA CENTRE

1 IDENT. CODE		2 LATITUDE (N = +)		3 LONGITUDE (W = +)		5 DATE		6 TIME		7 DEPTH		9 NO. DEPTHS		VESSEL	
COUNTRY INST.		DEG. MIN.		DEG. MIN.		YEAR MONTH DAY		HOURS G.M.T.		TO BOTTOM		HOURS		ENTERED BY CHECKED BY	
1	8	1	10	1	10	1	10	1	10	1	10	1	10	1	10
2		2		2		2		2		2		2		2	
3		3		3		3		3		3		3		3	
4		4		4		4		4		4		4		4	
5		5		5		5		5		5		5		5	
6		6		6		6		6		6		6		6	
7		7		7		7		7		7		7		7	
8		8		8		8		8		8		8		8	
9		9		9		9		9		9		9		9	
10		10		10		10		10		10		10		10	
11		11		11		11		11		11		11		11	
12		12		12		12		12		12		12		12	
13		13		13		13		13		13		13		13	
14		14		14		14		14		14		14		14	
15		15		15		15		15		15		15		15	
16		16		16		16		16		16		16		16	
17		17		17		17		17		17		17		17	
18		18		18		18		18		18		18		18	
19		19		19		19		19		19		19		19	
20		20		20		20		20		20		20		20	

OBSERVED CARD

1971 CANADIAN OCEANOGRAPHIC DATA CENTRE

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left(\frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

- σ_i = Standard deviation of the combined error estimates at standard oceanographic depth,
 ΔV_i = the interpolation error estimate of variable "V" at standard oceanographic depth = $1/3 (V_{i_1} - V_{i_2})$
 γ = Interpolation polynomial coefficient.
 Z_j = Observed depth.
 Z_i = Standard oceanographic depth, such that: $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction $\frac{\sigma}{\sigma}$, if ≥ 2 , is reported in this Data Record following the interpolated variable. It represents the **combined measurement and interpolation error estimate**. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the **interpolation error estimate** is given only when $\frac{\sigma}{\sigma} \geq 2$ (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

EXPLANATION OF DATA RECORD HEADINGS

MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

(1) CRUISE REFER-
ENCE NUMBER:

Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC

(2) CONSECUTIVE
NUMBER:

Indicates the chronological order in which the stations were occupied.

(3) LATITUDE:

Indicate the position of the platform at the time of observation

(4) LONGITUDE:

(5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).

(6) YEAR:

(7) MONTH:

(8) DAY:

(9) HOUR:

The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.

(10) COUNTRY/
INSTITUTE:

The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.

(11) DEPTH:

The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".

(12) MAXIMUM

SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).

00 m - 50 m = 00

51 m - 150 m = 01

151 m - 250 m = 02

etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1
($d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2
($d_w d_w P_w H_w$ -code): The direction, period and height of the **predominant non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE
(WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED
(WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) PO_4	(9) -P-	(10) NO_2	(11) NO_3	(12) SiO_3
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01° C. Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An **alphabetical character** following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by: $S = 0.03 + 1.805 C1\%$, reported in:
 a. 1/100 parts per 1000, or
 b. 1/1000 parts per 1000.

In **case a**: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In **case b**: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by: $(\text{Specific gravity} - 1) \times 10^3$ (e.g., σ_t reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

(8) PO ₄	Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
(9) -P-	Total Phosphorus reported to hundredths of microgram-atoms per litre.
(10) NO ₂	Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre — No dissolved nitrogen included —
(11) NO ₃	Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
(12) SiO ₂	Silicate-Silicon reported to tenths of microgram-atoms per litre.
(13) pH	The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY: **A.** The reported salinity values are measured to three decimal places.
 (i) the interpolation error estimate is less than twice the standard deviation of measurement
 —the interpolated value is reported to three decimal places (e.g., 30.139).
 (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
 —the interpolated value is reported to two decimal places, and followed by the **interpolation error estimate** (e.g., 29.23 C).
B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
 —the interpolated value is reported to two decimal places, and followed by the **combined measurement and interpolation error estimate** (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "Introduction" to section II of the data record).

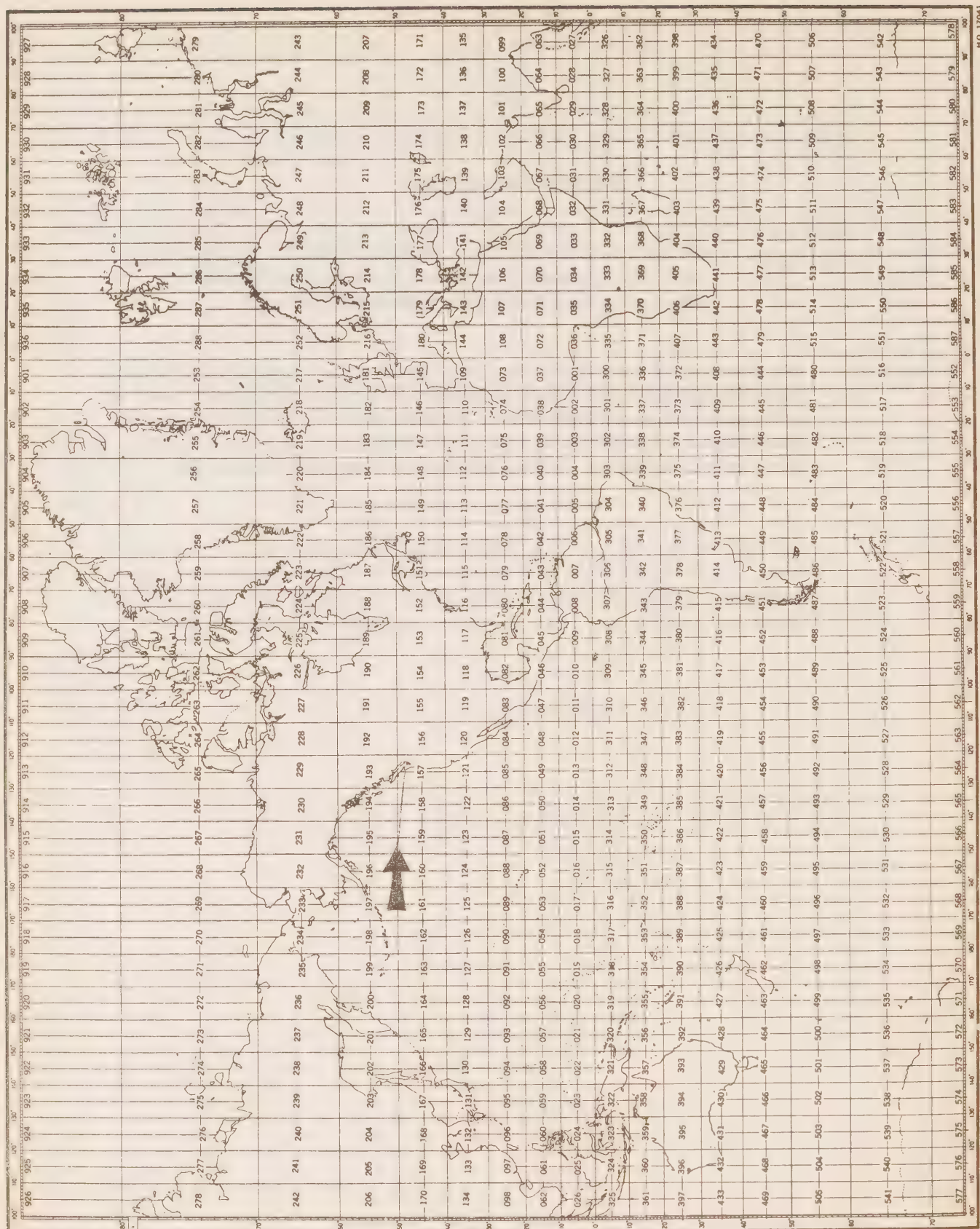
- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND
VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^P \delta \rho dp$$
- ΔD is expressed in dynamic metres (10^5 ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL
ENERGY
ANOMALY: The Potential energy anomaly χ as defined by:
- $$\chi = \frac{1}{g} \int_0^P \rho \delta dp = \int_0^Z \rho p \delta dz$$
- χ is expressed in units of 10^8 ergs/cm² and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC
VOLUME
ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- δ is expressed in ml/gr, and conventionally reported as $10^5 \delta$, to one decimal place (i.e., δ reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

SPECIAL CHARACTERS

† (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs.

* (Asterisk): this character may occur in the **interpolated** portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one **observed depth interval**. The **third**, and all consequent levels within that interval are preceded by the asterisk to indicate that more than **two** machine interpolations were carried out, utilizing the same set of interpolation parabolas.

Q appears occasionally in this data record, preceding an observed oxygen value. This "questionable" indicator infers that the value does not fit the usual pattern of oxygen distribution. It could be due to a sampling error and is generally not believed to be a determination methods error.



MARSDEN SQUARE CHART

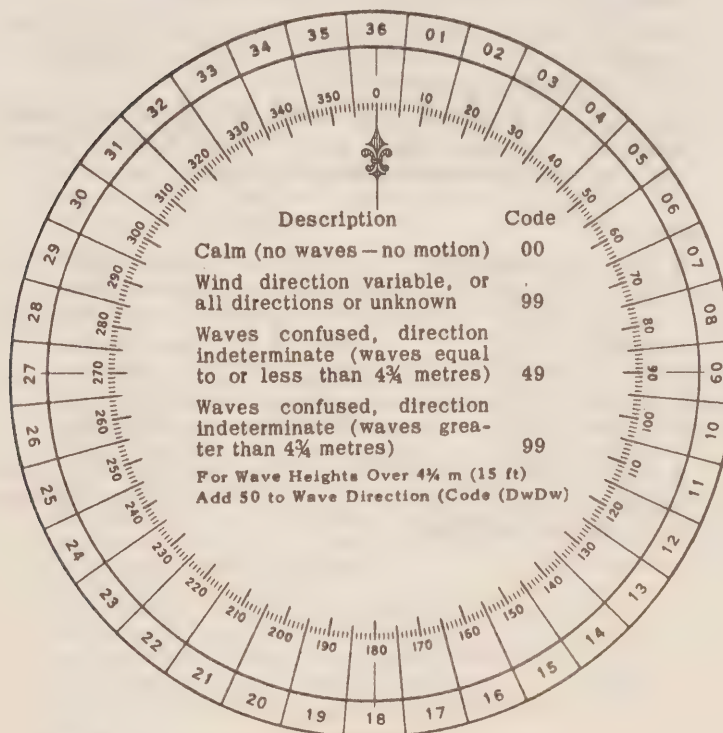
Table 1
CONVERSION
MINUTES TO $\frac{1}{10}$ HRS.

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

Table 2
WATER COLOR CODE
Based on Percentage Yellow

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

Table 3. DIRECTION CODE (dd)



NOTE:

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

Table 4. PERIOD OF THE WAVES (P_w)
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

Table 5. HEIGHT OF THE WAVES (H_w)

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 = $\frac{1}{4}$ m (1 ft) to $\frac{3}{4}$ m ($2\frac{1}{2}$ ft); 5 = $2\frac{1}{4}$ m (7 ft) to $2\frac{3}{4}$ m (9 ft); 9 = $4\frac{1}{4}$ m ($13\frac{1}{2}$ ft) to $4\frac{3}{4}$ m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of $2\frac{3}{4}$ m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	½ m (1½ ft)		1 5½ m (17½ ft)
2	1 m (3 ft)		2 6 m (19 ft)
3	1½ m (5 ft)		3 6½ m (21 ft)
4	2 m (6½ ft)		4 7 m (22½ ft)
5	2½ m (8 ft)		5 7½ m (24 ft)
6	3 m (9½ ft)		6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Add
50
to
Dw Dw

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww			
No meteors except photometeors	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
Haze, dust, sand or smoke	03	Clouds generally forming or developing	
	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	More of less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	} at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	
ww = 20 - 29			
	20	Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	} not falling as shower(s)
	21	Drizzle (not freezing) or snow grains	
	22	Rain (not freezing)	
	23	Snow	
	24	Rain and snow or ice pellets, type (a)	
	25	Freezing drizzle or freezing rain	
	26	Shower (s) of rain	
	27	Shower (s) of snow, or of rain and snow	
	28	Shower (s) of hail, or of rain and hail	
	29	Fog or ice fog	
ww = 30 - 39			
	30	Duststorm, sandstorm, drifting or blowing snow	
	31	Slight or moderate duststorm or sandstorm	} - has decreased during the preceding hour - no appreciable change during the preceding hour - has begun or has increased during the preceding hour
	32		
	33	Severe duststorm or sandstorm	} - has decreased during the preceding hour - no appreciable change during the preceding hour - has begun or has increased during the preceding hour
	34		
	35		
	36	Slight or moderate blowing snow	} generally low (below eye level)
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	} generally high (above eye level)
	39	Heavy blowing snow	
ww = 40 - 49			
	40	Fog or ice fog at the time of observation	
	41	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	42	Fog or ice fog in patches	
	43	Fog or ice fog, sky visible	} has become thinner during the preceding hour
	44	Fog or ice fog, sky invisible	
	45	Fog or ice fog, sky visible	} no appreciable change during the preceding hour
	46	Fog or ice fog, sky invisible	
	47	Fog or ice fog, sky visible	} has begun or has become thicker during the preceding hour
	48	Fog or ice fog, sky invisible	
	49	Fog, depositing rime, sky visible	
		Fog, depositing rime, sky invisible	

NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

PRECIPITATION ON STATION AT TIME OF OBSERVATION

ww = 50 - 59 Drizzle

- | | | | |
|----|--|---|--------------------------------------|
| 50 | Drizzle, not freezing, intermittent | { | slight at time of observation |
| 51 | Drizzle, not freezing, continuous | | |
| 52 | Drizzle, not freezing, intermittent | { | moderate at time of observation |
| 53 | Drizzle, not freezing, continuous | | |
| 54 | Drizzle, not freezing, intermittent | { | heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous | | |
| 56 | Drizzle, freezing, slight | | |
| 57 | Drizzle, freezing, moderate or heavy (dense) | | |
| 58 | Drizzle and rain, slight | | |
| 59 | Drizzle and rain, moderate or heavy | | |

ww = 60 - 69 Rain

- | | | | |
|----|---|---|---------------------------------|
| 60 | Rain, not freezing, intermittent | { | slight at time of observation |
| 61 | Rain, not freezing, continuous | | |
| 62 | Rain, not freezing, intermittent | { | moderate at time of observation |
| 63 | Rain, not freezing, continuous | | |
| 64 | Rain, not freezing, intermittent | { | heavy at time of observation |
| 65 | Rain, not freezing, continuous | | |
| 66 | Rain, freezing, slight | | |
| 67 | Rain, freezing, moderate or heavy | | |
| 68 | Rain or drizzle and snow, slight | | |
| 69 | Rain or drizzle and snow, moderate or heavy | | |

70 - 79 Solid precipitation not in showers

- | | | | |
|----|---|---|---------------------------------|
| 70 | Intermittent fall of snow flakes | { | slight at time of observation |
| 71 | Continuous fall of snow flakes | | |
| 72 | Intermittent fall of snow flakes | { | moderate at time of observation |
| 73 | Continuous fall of snow flakes | | |
| 74 | Intermittent fall of snow flakes | { | heavy at time of observation |
| 75 | Continuous fall of snow flakes | | |
| 76 | Ice prisms (with or without fog) | | |
| 77 | Snow grains (with or without fog) | | |
| 78 | Isolated starlike snow crystals (with or without fog) | | |
| 79 | Ice pellets, type (a) | | |

ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- | | | | |
|----|--|---|---|
| 80 | Rain shower(s), slight | | |
| 81 | Rain shower(s), moderate or heavy | | |
| 82 | Rain shower(s), violent | | |
| 83 | Shower(s) of rain and snow mixed, slight | | |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy | | |
| 85 | Snow shower(s), slight | | |
| 86 | Snow shower(s), moderate or heavy | | |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain | { | - slight |
| 88 | or rain and snow mixed | | |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder | { | - moderate or heavy |
| 90 | | | |
| 91 | Slight rain at time of observation | { | thunderstorm during the preceding hour but not at time of observation |
| 92 | Moderate or heavy rain at time of observation | | |
| 93 | Slight snow, or rain and snow mixed or hail at time of observation | | |
| 94 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation | { | thunderstorm at time of observation |
| 95 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | | |
| 96 | Thunderstorm, slight or moderate, with hail at time of observation | | |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation | { | |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation | | |
| 99 | Thunderstorm, heavy, with hail at time of observation | | |

PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus Ci	5	Nimbostratus Ns
1	Cirrocumulus Cc	6	Stratocumulus Sc
2	Cirrostratus Cs	7	Stratus St
3	Alto cumulus Ac	8	Cumulus Cu
4	Altostratus As	9	Cumulonimbus Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta = $\frac{1}{8}$ of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{3}{4}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

Table 11CCO Institute Code

01. Atlantic Oceanographic Group.
02. Pacific Oceanographic Group.
03. Biological Station, St. Andrews, N. B.
04. Arctic Biological Station, St. Anne de Bellevue, P. Q.
05. Biological Station, St. John's, Nfld.
06. Station de Biologie Marine, Grande Riviere, P. Q.
07. Canadian Hydrographic Service.
08. Naval Research Establishment, Dartmouth, N. S.
09. Pacific Naval Laboratory, Esquimalt, B. C.
10. Bedford Institute of Oceanography.
11. Polar Continental Shelf Project.
12. Great Lakes Institute.
13. Inland Region, Oceanographic Research, Ottawa.
14. Institute of Oceanography, Dalhousie University.

SECTION III

Serial oceanographic data

GENERAL INFORMATION

<u>Institute:</u>	Pacific Oceanographic Group Nanaimo, B. C.
<u>Observation Platform.:</u>	CCGS "St. Catharines" and "St. John's"
<u>Vessels' Cruising Speed:</u>	13 knots
<u>Total Number of Stations Occupied:</u>	29
<u>Anemometer Height Above Sea Level:</u>	19 metres
<u>Water Transparency</u>	Secchi Disc.
<u>Barometer readings</u>	Aneroid Barometer (corrected)
<u>Air Temperature</u>	Sling Psychrometer
<u>Wet bulb temperature</u>	Sling Psychrometer
<u>Surface sea water temperature</u>	Bucket sample (deck thermometer)
<u>Depth to bottom</u>	U. S. Coast and Geodetic Survey Chart 8500

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003
Oxygen	0.03

C-REF-NO 007	YR 1964	DEPTH 146	WAVES 1 XX	AIR T 16.1	VIS 7
CONS. NO 001	MONTH 8	MXSAMPD 01	WAVES 2 XX	WET B 14.4	STN 001
LAT 48-36 N	DAY 08	NO.DPTH 8	WND-DIR 990	WW-CODE 02	
LON 125-30 W	HR 00.2	W-COLOR 40	WND-SPD 01	CLD-TPE 2	
MARSD SQ 157	C/I 1802	W-TRNSP 08	BARO 1021.0	CLD-AMT 6	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
002	0000	149 B	31848		2359	15032
002	0010	1235	31920		2416	14950
002	0020	0944 B	32460		2508	14854
002	0030	0836 B	32689		2543	14818
002	0050	0724	33283		2606	14786
002	0075	0662 B	33734		2649	14771
002	0100	0656	33786		2654	14774
002	0125	0650 B	33790		2655	14775

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1490 B	31848		2359	15032	0000	00000	4311
0010	1235	31920		2416	14950	0041	00002	3772
0020	0944 B	32460		2508	14854	0074	00007	2890
0030	0836 B	32689		2543	14818	0102	00014	2563
0050	0724	33283		2606	14786	0147	00032	1970
0075	0662 B	33734		2649	14771	0192	00060	1556
0100	0656	33786		2654	14774	0230	00094	1513
0125	0650 B	33790		2655	14775	0268	00138	1506

C-REF-NO 007 YR 1964 DEPTH C 109 WAVES 1 49XX AIR T 14.9 VIS 7
 CONS. NO 002 MONTH 8 MXSAMPD 01 WAVES 2 2724 WET B 13.3 STN 002
 LAT 48-38 N DAY 08 NO.DPTH 6 WND-DIR 990 WW-CODE 03
 LON 126-00 W HR 02.5 W-COLOR 60 WND-SPD 02 CLD-TPE 6
 MARSQ SQ 157 C/I 1802 W-TRNSP 05 BARO 1021.0 CLD-AMT 4 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
025	0000	138 B	30131		2250	14975
025	0010	1329	31559		2370	14977
025	0020	1201 B	31732		2407	14937
025	0030	0895 B	32105		2488	14833
025	0050	0802	32773		2555	14809
025	0075	0697 B	33563		2631	14783

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1380 B	30131		2250	14975	0000	00000	5356
0010	1329	31559		2370	14977	0048	00002	4211
0020	1201 B	31732		2407	14937	0089	00008	3852
0030	0895 B	32105		2488	14833	0123	00017	3082
0050	0802	32773		2555	14809	0179	00039	2455
0075	0697 B	33563		2631	14783	0232	00072	1729

C-REF-NO 007	YR 1964	DEPTH C 1298	WAVES 1 49XX	AIR T 13.8	VIS 7
CONS. NO 003	MONTH 8	MXSAMPD 12	WAVES 2 2724	WET B 12.7	STN 003
LAT 48-42 N	DAY 08	NO.DPTH 19	WND-DIR 990	WW-CODE 02	
LON 126-40 W	HR 05.5	W-COLOR	WND-SPD 01	CLD-TPE 8	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1021.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
055	0000	150 B	33123		2455	15051
055	0010	1512 B	32090		2373	15044
055	0020	1420 B	32090		2392	15016
055	0030	0919 B	32252		2496	14844
055	0050	0792	32371		2525	14800
055	0075	0745 B	32917		2574	14793
055	0100	0729	33533		2625	14799
055	0125	0712 B	33716		2641	14799
055	0150	0703 B	33857		2654	14801
055	0175	0678 B	33923		2662	14796
055	0200	0655 B	33949		2667	14792
055	0250	0609 B	33966		2675	14782
055	0300	0576 C	33955		2678	14777
055	0400	0515 B	34049		2693	14769
064	0497	0481 B				
064	0596	0445	34189		2712	14775
064	0795	0392	34317		2727	14787
064	0995	0350	34400		2738	14804
064	1195	0310	34491		2749	14822

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1500 B	33123		2455	15051	0000	00000	3398
0010	1512 B	32090		2373	15044	0038	00002	4182
0020	1420 B	32090		2392	15016	0079	00008	3999
0030	0919 B	32252		2496	14844	0114	00017	3008
0050	0792	32371		2525	14800	0172	00041	2741
0075	0745 B	32917		2574	14793	0235	00080	2274
0100	0729	33533		2625	14799	0287	00125	1797
0125	0712 B	33716		2641	14799	0330	00175	1642
0150	0703 B	33857		2654	14801	0370	00231	1529
0175	0678 B	33923		2662	14796	0407	00294	1451
0200	0655 B	33949		2667	14792	0443	00363	1405
0225	0631 B	33962		2671	14786	0478	00439	1368
0250	0609 B	33966		2675	14782	0512	00522	1340
0300	0576 C	33955		2678	14777	0579	00711	1314
0400	0515 B	34049		2693	14769	0705	01160	1181
0500	0480 B	34125		2703	14772	0820	01689	1094
0600	0444	34192		2712	14775	0926	02288	1012

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0700	0415	34260		2720	14780	1025	02944	0938
0800	0391	34319		2728	14788	1117	03649	0874
1000	0347	3441 B		2739	14804	1283	05182	0772
1200	0309	34493		2749	14822	1430	06841	0682

C-REF-NO 007	YR 1964	DEPTH C 2496	WAVES 1 49XX	AIR T 15.5	VIS 7
CONS. NO 004	MONTH 8	MXSAMPD 08	WAVES 2 2724	WET B 14.4	STN 004
LAT 48-42 N	DAY 08	NO.DPTH 17	WND-DIR 990	WW-CODE 02	
LON 127-40 W	HR 10.4	W-COLOR	WND-SPD 01	CLD-TPE 8	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1018.0	CLD-AMT 7	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
104	0000	145 B	32099		2387	15022
104	0010	1416	32064		2391	15012
104	0019	1382 B	32073		2399	15003
104	0029	1337 B	32247		2421	14992
104	0048	0839	32440		2523	14819
104	0072	0709 B	32621		2556	14775
104	0096	0714	33110		2593	14787
104	0121	0702 B	33521		2627	14792
104	0145	0694 C	33761		2647	14796
104	0169	0664 B	33877		2660	14789
104	0193	0636 B	33916		2667	14783
104	0242	0585 B	33936		2675	14770
104	0290	0552	33964		2682	14765
104	0388	0496 B	33995		2691	14759
112	0500	0464 B	34121		2704	14766
112	0600	0433 B	34190		2713	14770
112	0800	0382	34316		2728	14784

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1450 B	32099		2387	15022	0000	00000	4047
0010	1416	32064		2391	15012	0040	00002	4008
0020	1381 B	32088		2400	15003	0080	00008	3924
0030	1313 D	32260		2427	14984	0118	00018	3670
0050	0815 C	3245 B		2527	14810	0183	00043	2713
0075	0706 B	3268 C		2560	14775	0247	00084	2402
0100	0713	33185		2599	14788	0303	00133	2035
0125	0701 B	33571		2631	14793	0350	00188	1736
0150	0689 C	33793		2651	14795	0392	00246	1557
0175	0657 B	33891		2663	14788	0430	00309	1447
0200	0628 B	33921		2669	14781	0465	00377	1391
0225	0601 B	33933		2673	14774	0500	00453	1352
0250	0579 B	33941		2676	14769	0534	00535	1321
0300	0545	33966		2683	14764	0599	00719	1268
0400	0492 B	34007		2692	14759	0723	01162	1185
0500	0464 B	34121		2704	14766	0837	01687	1078
0600	0433 B	34190		2713	14770	0942	02279	1001
0700	0408	3427 B		2722	14777	1039	02927	0924
0800	0382	34316		2728	14784	1130	03623	0867

C-REF-NO 007 YR 1964 DEPTH C 4206 WAVES 1 23XX AIR T 12.7 VIS 7
 CONS. NO 005 MONTH 8 MXSAMPD 42 WAVES 2 2724 WET B 11.6 STN
 LAT 49-57 N DAY 17 NO.DPTH 26 WND-DIR 230 WW-CODE 02
 LON 144-59 W HR 18.9 W-COLOR 30 WND-SPD 05 CLD-TPE 6
 MARSD SQ 159 C/I 1802 W-TRNSP 13 BARD 1021.0 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	121 B	32656	679	2477	14949
189	0010	1170	32643	674	2484	14936
189	0020	1157 B	32639	676	2486	14933
189	0030	0718 B	32716	736	2562	14773
189	0050	0578	32748	735	2582	14720
189	0074	0527 B	32755	734	2589	14703
189	0099	0492	32804	722	2597	14694
189	0124	0430 B	33209	614	2635	14677
189	0148	0383 C	33546	499	2667	14666
189	0173	0364 B	33688	385	2680	14664
189	0198	0365 B	33742	321	2684	14669
189	0248	0364 B	33825	241	2691	14678
189	0297	0368 C	33902	189	2697	14689
189	0396	0371 B	34044	130	2708	14709
189	0496	0358	34133	085	2716	14721
198	0592	0348 B	34213	086	2723	14734
198	0788	0317	34327	071	2735	14754
198	0985	0286	34394	067	2744	14775
198	1183	0260	34450	058	2750	14798
198	1479	0231	34512	074	2758	14836
198	1975	0198		124		
198	2473	0175	34634	196	2772	14982
198	2972	0159	34667	267	2776	15062
198	3471	0152 B	34681	302	2777	15146
198	3970	0151	34695	322	2779	15234
198	4170	0152	34688	317	2778	15269

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1210 B	32656	679	2477	14949	0000	00000	3183
0010	1170	32643	674	2484	14936	0032	00002	3124
0020	1157 B	32639	676	2486	14933	0063	00006	3106
0030	0718 B	32716	736	2562	14773	0091	00013	2382
0050	0578	32748	735	2582	14720	0137	00032	2188
0075	0526 B	32753	735	2589	14703	0191	00067	2128
0100	0490	32817	719	2598	14693	0243	00114	2043
0125	0428 B	33226	609	2637	14677	0290	00167	1674
0150	0381 C	33563	489	2669	14666	0329	00221	1376
0175	0364 B	33694	379	2681	14664	0362	00276	1263

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	0365 B	33746	317	2685	14670	0393	00336	1227
0225	0364 B	33789	272	2688	14674	0424	00403	1196
0250	0364 B	33828	238	2691	14679	0454	00476	1168
0300	0368 C	33907	187	2697	14690	0511	00638	1117
0400	0371 B	34048	128	2708	14709	0619	01024	1022
0500	0358	34137	085	2716	14721	0719	01482	0950
0600	0347 B	34219	086	2724	14734	0811	02004	0885
0700	0332	34283	078	2731	14746	0898	02581	0828
0800	0315	34332	071	2736	14756	0979	03208	0781
1000	0284	34399	066	2744	14777	1130	04599	0711
1200	0258	34454	058	2751	14800	1268	06157	0653
1500	0229	34516	076	2758	14839	1458	08775	0591
2000	0197	34589	127	2767	14910	1740	13825	0521
2500	0174	34636	200	2772	14987	1994	19693	0476
3000	0158	34668	270	2776	15067	2230	26382	0448
3500	0152 B	34682	304	2778	15151	2458	34048	0443
4000	0151	34691	319	2778	15239	2687	42943	0450

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 2224	AIR T 13.3	VIS 2
CONS. NO 006	MONTH 8	MXSAMPD 20	WAVES 2 2725	WET B 13.3	STN
LAT 50-06 N	DAY 19	NO.DPTH 21	WND-DIR 220	WW-CODE 45	
LON 144-52 W	HR 19.0	W-COLOR 30	WND-SPD 10	CLD-TPE X	
MARSD SQ 195	C/I 1802	W-TRNSP 14	BARO 1020.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	124 B	32641	674	2470	14959
190	0010	1180	32634	669 B	2481	14940
190	0020	1178 B	32631	669 B	2481	14940
190	0030	1176 B	32635	664 B	2482	14941
190	0050	0712	32740	750 B	2565	14774
190	0075	0524 B	32766	737 B	2590	14703
190	0100	0489 B	32786	744 B	2596	14692
190	0125	0458 B	32835	738 B	2603	14684
190	0150	0403 D	33334	564 B	2648	14672
190	0175	0369 B	33611	449 B	2674	14666
190	0200	0366 B	33710	348 B	2682	14670
190	0250	0365 B	33800	262 B	2689	14679
190	0300	0366 B	33906	182 B	2697	14689
190	0400	0370 B		137 B		
195	0498	0358	34132	086 B	2716	14721
195	0597	0344	34216	079 B	2724	14733
195	0795	0316	34329	057	2736	14755
195	0994	0283	34398	065 B	2744	14775
195	1193	0257	34458	067 B	2751	14798
195	1492	0228	34524	082 B	2759	14837
195	1992	0195	34596	137 B	2767	14908

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1240 B	32641	674	2470	14959	0000	00000	3248
0010	1180	32634	669 B	2481	14940	0032	00002	3148
0020	1178 B	32631	669 B	2481	14940	0064	00006	3149
0030	1176 B	32635	664 B	2482	14941	0095	00015	3145
0050	0712	32740	750 B	2565	14774	0151	00036	2359
0075	0524 B	32766	737 B	2590	14703	0207	00072	2116
0100	0489 B	32786	744 B	2596	14692	0260	00119	2066
0125	0458 B	32835	738 B	2603	14684	0311	00178	1998
0150	0403 D	33334	564 B	2648	14672	0356	00241	1570
0175	0369 B	33611	449 B	2674	14665	0392	00301	1330
0200	0366 B	33710	348 B	2682	14670	0425	00364	1255
0225	0365 B	3376 B	295 C	2686	14674	0456	00432	1216
0250	0365 B	33800	262 B	2689	14679	0486	00506	1190
0300	0366 B	33906	182 B	2697	14689	0545	00670	1116
0400	0370 B	3404 C	137 B	2708	14709	0653	01055	1024

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0358	34134	086 B	2716	14721	0752	01515	0952
0600	0344	34218	079 B	2724	14733	0845	02036	0882
0700	0330	34282	066 B	2731	14745	0931	02612	0827
0800	0315	34331	057	2736	14756	1013	03238	0782
1000	0282	34400	065 B	2744	14776	1163	04627	0708
1200	0256	34460	067 B	2751	14799	1301	06174	0647
1500	0226	34528	082 B	2759	14837	1487	08750	0578
2000	0195	34597	138 B	2767	14909	1764	13709	0513

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 2021	AIR T	VIS 1
CONS. NO 007	MONTH 8	MXSAMPD 04	WAVES 2 2923	WET B	STN
LAT 50-03 N	DAY 21	NO.DPTH 14	WND-DIR 200	WW-CODE 45	
LON 144-57 W	HR 19.1	W-COLOR 30	WND-SPD 05	CLD-TPE X	
MARSD SQ 195	C/I 1802	W-TRNSP 15	BARO 1029.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
191	0000	124 B	32640	672	2470	14959
191	0009	1203	32630	671 B	2477	14947
191	0018	1198 B	32628	674 B	2477	14947
191	0027	1192 B	32626	669 B	2478	14946
191	0045	0625	32732	744 B	2575	14738
191	0067	0567 B	32741	749 B	2583	14718
191	0089	0532	32745	739 B	2588	14708
191	0111	0485 B	32757	728 B	2594	14692
191	0134	0431 C	33204	615 B	2635	14679
191	0156	0384 B	33511	510 B	2664	14667
191	0178	0370 B	33652	428 B	2677	14667
191	0223	0362 B	33767	290 B	2687	14673
191	0267	0366 C	33865	205 B	2694	14683
191	0356	0370 B	33996	141 B	2704	14701

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1240 B	32640	672	2470	14959	0000	00000	3249
0010	1202	32630	671 B	2477	14947	0032	00002	3190
0020	1205 C	32626	672 B	2476	14950	0064	00007	3200
0030	1107 I	3264 B	680 B	2495	14917	0096	00015	3020
0050	0580 I	3274 B	750 B	2582	14721	0148	00035	2197
0075	0554 B	32742	746 B	2585	14714	0203	00070	2167
0100	0510	3273 F	739 B	2589	14700	0257	00119	2134
0125	0452 B	3301 H	665 B	2617	14684	0308	00176	1861
0150	0395 B	33441	537 B	2658	14670	0350	00235	1481
0175	0371 B	33639	438 B	2676	14667	0385	00294	1311
0200	0364 B	3372 C	355 B	2683	14669	0417	00355	1242
0225	0362 B	33772	285 B	2687	14673	0448	00423	1207
0250	0364 B	33829	233 B	2691	14679	0478	00496	1167
0300	0364 B	33921	160 B	2699	14688	0535	00657	1102

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 3024	AIR T 12.2	VIS 6
CONS. NO 008	MONTH 8	MXSAMPD 04	WAVES 2 3024	WET B 11.1	STN
LAT 49-50 N	DAY 25	NO.DPTH 14	WND-DIR 300	WW-CODE 02	
LON 144-57 W	HR 19.9	W-COLOR 30	WND-SPD 07	CLD-TPE 6	
MARSD SQ 159	C/I 1802	W-TRNSP 15	BARO 1024.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	123 B	32591		2469	14955
199	0010	1208	32607	663	2474	14949
199	0020	1207 B	32606	669 B	2474	14950
199	0030	1206 B	32606	668 B	2474	14952
199	0050	0654	32755	753 B	2574	14751
199	0075	0526 B	32748	738 B	2589	14703
199	0100	0494	32780	736 B	2595	14694
199	0125	0438 B	32876	722 B	2608	14676
199	0150	0390 B	33238	578 B	2642	14665
199	0175	0337 B	33588	412 B	2675	14652
199	0200	0334 B	33680	337 B	2682	14656
199	0250	0348 B	33805	224 B	2691	14672
199	0300	0358 B	33886	171 B	2696	14685
199	0400	0362 C	33996	112 B	2705	14705

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1230 B	32591		2469	14955	0000	00000	3266
0010	1208	32607	663	2474	14949	0033	00002	3217
0020	1207 B	32606	669 B	2474	14950	0065	00007	3219
0030	1206 B	32606	668 B	2474	14952	0097	00015	3219
0050	0654	32755	753 B	2574	14751	0153	00037	2274
0075	0526 B	32748	738 B	2589	14703	0208	00072	2132
0100	0494	32780	736 B	2595	14694	0261	00119	2076
0125	0438 B	32876	722 B	2608	14676	0312	00178	1947
0150	0390 B	33238	578 B	2642	14665	0357	00241	1629
0175	0337 B	33588	412 B	2675	14652	0394	00302	1317
0200	0334 B	33680	337 B	2682	14656	0426	00364	1247
0225	0340 B	33750	274 B	2687	14663	0457	00431	1201
0250	0348 B	33805	224 B	2691	14672	0487	00504	1170
0300	0358 B	33886	171 B	2696	14685	0545	00667	1123
0400	0362 C	33996	112 B	2705	14705	0654	01060	1052

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 272X	AIR T 12.2	VIS 2
CONS. NO 009	MONTH 8	MXSAMPD 20	WAVES 2 2922	WET B 11.6	STN
LAT 50-00 N	DAY 29	NO.DPTH 21	WND-DIR 270	WW-CODE 45	
LON 145-00 W	HR 18.9	W-COLOR 30	WND-SPD 09	CLD-TPE X	
MARSD SQ 195	C/I 1802	W-TRNSP 13	BARO 1026.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	123 B	32631	666	2472	14955
189	0010	1194 B	32619	667 B	2477	14944
189	0020	1190 B	32622	665 B	2478	14945
189	0030	1190 B	32622	660 B	2478	14946
189	0050	0620	32753	750 B	2578	14737
189	0075	0530 B	32767	739 B	2590	14705
189	0100	0492	32813	732 B	2597	14694
189	0125	0428 B	33059	644 B	2624	14675
189	0150	0380 C	33567	485 B	2669	14665
189	0175	0368 B	33662	402 B	2678	14666
189	0200	0364 B	33728	326 B	2683	14669
189	0250	0356 B	33816	229 B	2691	14675
189	0300	0360 C	33911	151 B	2698	14686
189	0400	0364 B	34040	111 B	2708	14706
195	0500	0359 B	34120	087 B	2715	14722
195	0600	0346 B	34207	080 B	2723	14734
195	0800	0315	34322	059	2735	14756
195	1000	0282	34397	071	2744	14776
195	1200	0258	34452	066 B	2751	14800
195	1500	0230	34511	076 B	2758	14839
195	2000	0198	34592	132 B	2767	14911

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1230 B	32631	666	2472	14955	0000	00000	3237
0010	1194 B	32619	667 B	2477	14944	0032	00002	3184
0020	1190 B	32622	665 B	2478	14945	0064	00007	3177
0030	1190 B	32622	660 B	2478	14946	0096	00015	3179
0050	0620	32753	750 B	2578	14737	0151	00036	2234
0075	0530 B	32767	739 B	2590	14705	0205	00071	2122
0100	0492	32813	732 B	2597	14694	0258	00118	2049
0125	0428 B	33059	644 B	2624	14675	0306	00174	1800
0150	0380 C	33567	485 B	2669	14665	0346	00229	1372
0175	0368 B	33662	402 B	2678	14666	0380	00285	1291
0200	0364 B	33728	326 B	2683	14669	0412	00346	1240
0225	0359 B	33775	272 B	2688	14672	0443	00413	1201
0250	0356 B	33816	229 B	2691	14675	0472	00486	1169
0300	0360 C	33911	151 B	2698	14686	0530	00648	1106
0400	0364 B	34040	111 B	2708	14706	0637	01031	1021

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0359 B	34120	087 B	2715	14722	0737	01493	0964
0600	0346 B	34207	080 B	2723	14734	0831	02021	0893
0700	0331 B	34272	068 B	2730	14745	0918	02604	0836
0800	0315	34322	059	2735	14756	1001	03236	0788
1000	0282	34397	071	2744	14776	1152	04632	0710
1200	0258	34452	066 B	2751	14800	1290	06191	0654
1500	0230	34511	076 B	2758	14839	1480	08822	0595
2000	0198	34592	132 B	2767	14911	1764	13885	0520

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 2820	AIR T 13.3	VIS 6
CONS. NO 010	MONTH 8	MXSAMPD 42	WAVES 2 2822	WET B 13.3	STN
LAT 50-06 N	DAY 31	NO.DPTH 26	WND-DIR 280	WW-CODE 02	
LON 145-02 W	HR 19.2	W-COLOR 30	WND-SPD 02	CLD-TPE 6	
MARSD SQ 195	C/I 1802	W-TRNSP 15	BARO 1030.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
206	0000	130 B	32650	666	2460	14979
206	0010	1212	32628	668 B	2475	14951
206	0020	1196 B	32630	666 B	2478	14947
206	0030	1186 B	32628	669 B	2480	14945
206	0050	0589	32743	742 B	2581	14725
206	0075	0523 B	32762	737 B	2590	14702
206	0100	0490	32776	735 B	2595	14693
206	0125	0460 B	32834	720 B	2603	14685
206	0150	0394 C	33218	583 B	2640	14667
206	0175	0336 B	33609	397 B	2677	14651
206	0200	0335 B	33669	337 B	2681	14656
206	0250	0348 B	33805	223 B	2691	14672
206	0300	0357 C	33887	153 B	2697	14685
206	0400	0364 B	34020	112 B	2707	14706
206	0500	0356 B	34127	080 B	2716	14721
192	0586	0347 B	34202	080 B	2723	14732
192	0780	0314 B	34311	058 B	2734	14752
192	0974	0285	34386	064 B	2743	14773
192	1167	0260	34456	067 B	2751	14795
192	1457	0231	34507	073 B	2757	14832
192	1942	0197	34584	129 B	2766	14900
192	2430	0176	34624	186 B	2771	14975
192	2923	0160	34652	261 B	2775	15054
192	3430	0153 B	34673	293 B	2777	15139
192	3945	0151	34679	315 B	2777	15229
192	4156	0152	34676	309 B	2777	15267

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300 B	32650	666	2460	14979	0000	00000	3352
0010	1212	32628	668 B	2475	14951	0033	00002	3209
0020	1196 B	32630	666 B	2478	14947	0065	00007	3181
0030	1186 B	32628	669 B	2480	14945	0097	00015	3167
0050	0589	32743	742 B	2581	14725	0151	00036	2205
0075	0523 B	32762	737 B	2590	14702	0205	00071	2118
0100	0490	32776	735 B	2595	14693	0258	00118	2074
0125	0460 B	32834	720 B	2603	14685	0310	00177	2001
0150	0394 C	33218	583 B	2640	14667	0355	00241	1648
0175	0336 B	33609	397 B	2677	14651	0393	00303	1301

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0200	0335 B	33669	337 B	2681	14656	0425	00365	1256
0225	0341 B	33739	277 B	2686	14663	0456	00432	1211
0250	0348 B	33805	223 B	2691	14672	0486	00505	1170
0300	0357 C	33887	153 B	2697	14685	0544	00668	1121
0400	0364 B	34020	112 B	2707	14706	0653	01057	1036
0500	0356 B	34127	080 B	2716	14721	0753	01520	0955
0600	0345 B	34212	078 B	2724	14734	0846	02044	0888
0700	0328 B	34273	067 B	2730	14744	0933	02624	0832
0800	0311 B	34320	058 B	2735	14754	1015	03254	0786
1000	0281	34396	064 B	2744	14775	1166	04647	0710
1200	0256	34464	067 B	2752	14799	1303	06193	0644
1500	0227	34515	077 B	2758	14838	1491	08790	0589
2000	0194	34590	135 B	2767	14909	1772	13813	0517
2500	0173	34629	197 B	2772	14986	2026	19691	0481
3000	0158	34656	268 B	2775	15067	2265	26481	0457
3500	0152 B	34675	298 B	2777	15151	2497	34274	0449
4000	0151	34678	311	2777	15239	2730	43326	0459

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 2322	AIR T 11.6	VIS 7
CONS. NO 011	MONTH 9	MXSAMPD 04	WAVES 2 2323	WET B 11.1	STN
LAT 50-05 N	DAY 02	NO.DPTH 14	WND-DIR 230	WW-CODE 02	
LON 144-49 W	HR 19.0	W-COLOR 30	WND-SPD 09	CLD-TPE 7	
MARSD SQ 195	C/I 1802	W-TRNSP 13	BARO 1025.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	127 B	32597	668	2461	14969
190	0010	1258 B	32607	667 B	2464	14966
190	0020	1246 B	32644	668 B	2470	14964
190	0030	1217 B	32615	663 B	2473	14955
190	0050	0812 D	32694	723 B	2547	14812
190	0075	0549 B	32762	748 B	2587	14713
190	0100	0493	32768	734 B	2594	14694
190	0125	0422 B	33068	639 B	2625	14672
190	0150	0397 C	33504	521 B	2662	14672
190	0175	0372 B	33658	414 B	2677	14667
190	0200	0366 B	33717	340 B	2682	14670
190	0250	0362 B	33795	261 B	2689	14677
190	0300	0367 C	33891	182 B	2696	14689
190	0400	0362 B	34018	106 B	2707	14705

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1270 B	32597	668	2461	14969	0000	00000	3335
0010	1258 B	32607	667 B	2464	14966	0033	00002	3308
0020	1246 B	32644	668 B	2470	14964	0066	00007	3261
0030	1217 B	32615	663 B	2473	14955	0099	00015	3232
0050	0812 D	32694	723 B	2547	14812	0157	00038	2528
0075	0549 B	32762	748 B	2587	14713	0216	00075	2147
0100	0493	32768	734 B	2594	14694	0269	00123	2083
0125	0422 B	33068	639 B	2625	14672	0318	00179	1787
0150	0397 C	33504	521 B	2662	14672	0358	00235	1436
0175	0372 B	33658	414 B	2677	14667	0393	00293	1298
0200	0366 B	33717	340 B	2682	14670	0425	00354	1250
0225	0363 B	33758	295 B	2686	14673	0456	00422	1218
0250	0362 B	33795	261 B	2689	14677	0486	00496	1191
0300	0367 C	33891	182 B	2696	14689	0545	00661	1128
0400	0362 B	34018	106 B	2707	14705	0654	01051	1035

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 0721	AIR T 12.7	VIS 2
CONS. NO 012	MONTH 9	MXSAMPD 04	WAVES 2 0721	WET B 12.7	STN
LAT 49-57 N	DAY 04	NO.DPTH 14	WND-DIR 070	WW-CODE 45	
LON 145-07 W	HR 18.9	W-COLOR 30	WND-SPD 05	CLD-TPE X	
MARSD SQ 159	C/I 1802	W-TRNSP 14	BARO 1031.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	132 B	32625	666	2454	14986
189	0010	1270	32624	667 B	2463	14971
189	0020	1225 B	32626	675 B	2472	14957
189	0030	1206 B	32634	665 B	2476	14952
189	0050	0634	32741	743 B	2575	14743
189	0075	0540 B	32777	739 B	2589	14709
189	0100	0480 B	32790	736 B	2597	14689
189	0125	0428 B	32976	674 B	2617	14674
189	0150	0368 C	33462	500 B	2662	14659
189	0175	0346 B	33621	411 B	2677	14656
189	0200	0346 B	33680	351 B	2681	14661
189	0250	0348 B	33794	232 B	2690	14671
189	0300	0365 C	33894	176 B	2696	14688
189	0400	0370 B	34030	129 B	2707	14709

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1320 B	32625	666	2454	14986	0000	00000	3408
0010	1270	32624	667 B	2463	14971	0034	00002	3318
0020	1225 B	32626	675 B	2472	14957	0067	00007	3236
0030	1206 B	32634	665 B	2476	14952	0099	00015	3199
0050	0634	32741	743 B	2575	14743	0154	00037	2260
0075	0540 B	32777	739 B	2589	14709	0209	00072	2126
0100	0480 B	32790	736 B	2597	14689	0262	00119	2053
0125	0428 B	32976	674 B	2617	14674	0311	00175	1862
0150	0368 C	33462	500 B	2662	14659	0353	00233	1440
0175	0346 B	33621	411 B	2677	14656	0387	00291	1301
0200	0346 B	33680	351 B	2681	14661	0419	00353	1258
0225	0346 B	33738	287 B	2686	14666	0451	00421	1216
0250	0348 B	33794	232 B	2690	14671	0481	00494	1178
0300	0365 C	33894	176 B	2696	14688	0539	00658	1124
0400	0370 B	34030	129 B	2707	14709	0648	01047	1034

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 3321	AIR T 11.6	VIS 4
CONS. NO 013	MONTH 9	MXSAMPD 04	WAVES 2 3322	WET B 11.6	STN
LAT 50-00 N	DAY 07	NO.DPTH 14	WND-DIR 330	WW-CODE 40	
LON 145-00 W	HR 19.0	W-COLOR 30	WND-SPD 07	CLD-TPE 7	
MARSD SQ 195	C/I 1802	W-TRNSP 14	BARO 1024.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	130 B	32615	666	2457	14979
190	0010	1309	32610	669 B	2455	14984
190	0020	1303 B	32608	667 B	2456	14983
190	0030	1209 B	32615	672 B	2474	14953
190	0050	0650	32761	750 B	2574	14749
190	0075	0533 B	32793	742 B	2591	14707
190	0100	0493	32813	734 B	2597	14694
190	0125	0442 B	32981	678 B	2616	14680
190	0150	0368 C	33477	495 B	2663	14659
190	0175	0361 B	33633	423 B	2676	14662
190	0200	0340 B	33684	349 B	2682	14658
190	0250	0349 B	33810	228 B	2691	14672
190	0300	0362 C	33907	160 B	2698	14687
190	0400	0366 B	34035	126 B	2708	14707

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300 B	32615	666	2457	14979	0000	00000	3378
0010	1309	32610	669 B	2455	14984	0034	00002	3400
0020	1303 B	32608	667 B	2456	14983	0068	00007	3393
0030	1209 B	32615	672 B	2474	14953	0101	00015	3218
0050	0650	32761	750 B	2574	14749	0157	00037	2264
0075	0533 B	32793	742 B	2591	14707	0212	00072	2106
0100	0493	32813	734 B	2597	14694	0264	00119	2050
0125	0442 B	32981	678 B	2616	14680	0313	00176	1872
0150	0368 C	33477	495 B	2663	14659	0355	00234	1428
0175	0361 B	33633	423 B	2676	14662	0389	00291	1306
0200	0340 B	33684	349 B	2682	14658	0422	00353	1250
0225	0340 B	33747	283 B	2687	14663	0452	00420	1204
0250	0349 B	33810	228 B	2691	14672	0482	00493	1167
0300	0362 C	33907	160 B	2698	14687	0540	00655	1111
0400	0366 B	34035	126 B	2708	14707	0648	01040	1027

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 1122	AIR T 13.3	VIS 3
CONS. NO 014	MONTH 9	MXSAMPD 20	WAVES 2 1723	WET B 13.3	STN
LAT 50-06 N	DAY 09	NO.DPTH 21	WND-DIR 110	WW-CODE 46	
LON 145-03 W	HR 18.8	W-COLOR 30	WND-SPD 10	CLD-TPE X	
MARSD SQ 195	C/I 1802	W-TRNSP 13	BARO 1022.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
196	0000	136 B	32643	662	2447	14999
196	0010	1338 B	32635	662 B	2451	14994
196	0020	1269 B	32634	681 B	2464	14972
196	0030	1212 B	32637	671 B	2475	14954
196	0050	0667	32744	741 B	2571	14756
196	0075	0540 B	32750	732 B	2587	14709
196	0100	0500	32807	733 B	2596	14697
196	0125	0445 B	32910	710 B	2610	14680
196	0150	0400 C	33334	559 B	2648	14671
196	0175	0358 B	33578	458 B	2672	14660
196	0200	0342 B	33665	368 B	2680	14659
196	0250	0339 B	33785	231 B	2690	14667
196	0300	0361 C	33892	160 B	2697	14686
196	0400	0368 C	34031	128 B	2707	14708
188	0500	0359 B	34136	089 B	2716	14722
188	0600	0347 B	34213	074 B	2724	14734
188	0800	0312	34323	058 B	2736	14754
188	1000	0283	34391	065 B	2744	14776
188	1200	0257	34453	066 B	2751	14799
188	1500	0226	34516	079 B	2758	14837
188	2000	0193	34593	143 B	2767	14909

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1360 B	32643	662	2447	14999	0000	00000	3471
0010	1338 B	32635	662 B	2451	14994	0035	00002	3437
0020	1269 B	32634	681 B	2464	14972	0069	00007	3311
0030	1212 B	32637	671 B	2475	14954	0101	00015	3207
0050	0667	32744	741 B	2571	14756	0157	00037	2298
0075	0540 B	32750	732 B	2587	14709	0213	00073	2146
0100	0500	32807	733 B	2596	14697	0266	00120	2062
0125	0445 B	32910	710 B	2610	14680	0316	00178	1929
0150	0400 C	33334	559 B	2648	14671	0360	00239	1567
0175	0358 B	33578	458 B	2672	14660	0397	00300	1345
0200	0342 B	33665	368 B	2680	14659	0429	00363	1266
0225	0337 B	33730	292 B	2686	14661	0461	00431	1213
0250	0339 B	33785	231 B	2690	14667	0491	00505	1176
0300	0361 C	33892	160 B	2697	14686	0549	00668	1121
0400	0368 C	34031	128 B	2707	14708	0657	01056	1032

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0500	0359 B	34136	089 B	2716	14722	0758	01517	0952
0600	0347 B	34213	074 B	2724	14734	0851	02041	0889
0700	0330 B	34274	063 B	2730	14745	0938	02621	0833
0800	0312	34323	058 B	2736	14754	1019	03251	0784
1000	0283	34391	065 B	2744	14776	1171	04649	0715
1200	0257	34453	066 B	2751	14799	1310	06212	0653
1500	0226	34516	079 B	2758	14837	1498	08820	0587
2000	0193	34593	143 B	2767	14909	1778	13815	0513

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 2324	AIR T 13.3	VIS 6
CONS. NO 015	MONTH 9	MXSAMPD 04	WAVES 2 2626	WET B 12.7	STN
LAT 50-00 N	DAY 14	NO.DPTH 14	WND-DIR 240	WW-CODE 21	
LON 145-00 W	HR 19.0	W-COLOR	WND-SPD 10	CLD-TPE 5	
MARSD SQ 195	C/I 1802	W-TRNSP	BARU 1001.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0000	130 B	32613	649	2457	14979
190	0010	1273	32612	651 B	2462	14971
190	0020	1270 B	32613	651 B	2463	14972
190	0030	1268 B	32612	645 B	2463	14973
190	0050	0594	32764	744 B	2582	14727
190	0075	0524 B	32803	737 B	2593	14703
190	0100	0484	32837	732 B	2600	14691
190	0125	0428 B	33047	656 B	2623	14675
190	0150	0396 C	33434	534 B	2657	14670
190	0175	0343 B	33608	421 B	2676	14654
190	0200	0330 B	33672	346 B	2682	14654
190	0250	0338 B	33839	202 B	2695	14668
190	0300	0353 B	33934	124 B	2701	14684
190	0400	0363 B	34041	103 B	2708	14706

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300 B	32613	649	2457	14979	0000	00000	3379
0010	1273	32612	651 B	2462	14971	0034	00002	3332
0020	1270 B	32613	651 B	2463	14972	0067	00007	3328
0030	1268 B	32612	645 B	2463	14973	0101	00015	3327
0050	0594	32764	744 B	2582	14727	0156	00037	2195
0075	0524 B	32803	737 B	2593	14703	0210	00071	2089
0100	0484	32837	732 B	2600	14691	0262	00118	2022
0125	0428 B	33047	656 B	2623	14675	0310	00173	1809
0150	0396 C	33434	534 B	2657	14670	0352	00231	1488
0175	0343 B	33608	421 B	2676	14654	0387	00290	1308
0200	0330 B	33672	346 B	2682	14654	0419	00351	1249
0225	0331 B	3376 B	269 B	2689	14659	0450	00418	1188
0250	0338 B	33839	202 B	2695	14668	0479	00490	1135
0300	0353 B	33934	124 B	2701	14684	0535	00647	1082
0400	0363 B	34041	103 B	2708	14706	0641	01027	1019

C-REF-NO 007 YR 1964 DEPTH C 4206 WAVES 1 282X AIR T 12.2 VIS 7
 CONS. NO 016 MONTH 9 MXSAMPD 06 WAVES 2 2725 WET B 11.1 STN
 LAT 50-02 N DAY 16 NO.DPTH 16 WND-DIR 280 WW-CODE 02
 LON 144-52 W HR 19.1 W-COLOR 30 WND-SPD 04 CLD-TPE 3
 MARSD SQ 195 C/I 1802 W-TRNSP 15 BARO 1012.0 CLD-AMT 3 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
205	0000	131 B	32621	652	2455	14982
205	0010	1256	32610	647 B	2465	14966
205	0020	1251 B	32613	642 B	2466	14966
205	0030	1250 B	32615	636 B	2467	14967
205	0050	0619	32764	726 B	2579	14737
205	0075	0531 B	32788	721 B	2591	14706
205	0100	0476	32821	717 B	2600	14688
205	0125	0402 B	33271	576 B	2643	14667
205	0150	0372 C	33595	461 B	2672	14662
205	0175	0337 B	33646	376 B	2679	14652
205	0200	0330 B	33702	295 B	2684	14654
205	0250	0341 B	33822	180 B	2693	14669
205	0300	0356 C	33910	127 B	2699	14685
191	0400	0360 B	34035	100 B	2708	14705
205	0500	0358 B	34145	085 B	2717	14722
191	0600	0346	34221	070	2724	14734

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1310 B	32621	652	2455	14982	0000	00000	3392
0010	1256	32610	647 B	2465	14966	0034	00002	3302
0020	1251 B	32613	642 B	2466	14966	0067	00007	3293
0030	1250 B	32615	636 B	2467	14967	0100	00015	3292
0050	0619	32764	726 B	2579	14737	0155	00037	2224
0075	0531 B	32788	721 B	2591	14706	0210	00072	2108
0100	0476	32821	717 B	2600	14687	0262	00118	2026
0125	0402 B	33271	576 B	2643	14667	0308	00170	1614
0150	0372 C	33595	461 B	2672	14662	0345	00223	1344
0175	0337 B	33646	376 B	2679	14652	0378	00277	1274
0200	0330 B	33702	295 B	2684	14654	0410	00338	1227
0225	0333 B	33763	230 B	2689	14660	0440	00404	1185
0250	0341 B	33822	180 B	2693	14669	0469	00476	1150
0300	0356 C	33910	127 B	2699	14685	0526	00636	1103
0400	0360 B	34035	100 B	2708	14704	0633	01019	1020
0500	0358 B	34145	085 B	2717	14722	0732	01476	0944
0600	0346	34221	070	2724	14734	0825	01996	0882

C-REF-NO 007	YR 1964	DEPTH C 4206	WAVES 1 2221	AIR T 13.3	VIS 6
CONS. NO 017	MONTH 9	MXSAMPD 35	WAVES 2 2723	WET B 12.7	STN
LAT 49-57 N	DAY 18	NO.DPTH 24	WND-DIR 220	WW-CODE 42	
LON 145-02 W	HR 19.0	W-COLOR	WND-SPD 05	CLD-TPE 7	
MARSD SQ 159	C/I 1802	W-TRNSP	BARO 1010.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
202	0000	136 B	32619	652	2445	14999
202	0009	1260	32609	646 B	2464	14967
202	0019	1254 B	32609	644 B	2465	14966
202	0028	1253 B	32613	641 B	2466	14968
202	0048	0642	32765	748 B	2576	14746
202	0071	0534 B	32798	736 B	2592	14706
202	0095	0491	32826	731 B	2599	14693
202	0119	0451 B	32945	693 B	2612	14682
202	0143	0414 C	33243	591 B	2640	14674
202	0167	0362 B	33573	461 B	2671	14661
202	0191	0356 B	33661	382 B	2679	14663
202	0240	0344 B	33778	245 B	2689	14668
202	0289	0352 B	33873	146 B	2696	14681
202	0389	0361 B	34010	095 B	2706	14703
190	0500	0358 B	34126	092 B	2716	14721
190	0600	0346 B	34208	077 B	2723	14734
190	0800	0310	34317	064 B	2735	14753
190	1000	0282	34392	058 B	2744	14776
190	1200	0257	34446	061 B	2750	14799
190	1500	0227	34512	079 B	2758	14837
190	2000	0194	34590	137 B	2767	14909
190	2500	0172 B	34627	199	2772	14985
190	3000	0158	34657	254	2775	15066
190	3500	0152	34671	281	2777	15151

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1360 B	32619	652	2445	14999	0000	00000	3489
0010	1257	32609	646 B	2465	14966	0034	00002	3305
0020	1258 B	32608	643 B	2465	14968	0067	00007	3309
0030	1200 I	3263 B	651 B	2477	14950	0100	00015	3193
0050	0619 D	32771	750 B	2579	14737	0155	00036	2219
0075	0524 B	32800	736 B	2593	14703	0209	00071	2091
0100	0482	32840	727 B	2601	14690	0260	00117	2018
0125	0442 B	3301 B	672 B	2618	14680	0309	00173	1851
0150	0397 C	3335 C	552 B	2650	14670	0352	00233	1552
0175	0357 B	3362 C	431 B	2675	14661	0388	00293	1315
0200	0353 B	33686	354 B	2681	14664	0421	00355	1260
0225	0347 B	33748	283 B	2687	14666	0452	00423	1210

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0250	0345 B	33799	221 B	2691	14670	0482	00496	1171
0300	0354 B	33891	134 B	2697	14683	0539	00659	1115
0400	0361 B	34023	094 B	2707	14705	0648	01046	1031
0500	0358 B	34126	092 B	2716	14721	0748	01508	0958
0600	0346 B	34208	077 B	2723	14734	0842	02035	0892
0700	0329 B	34269	069 B	2730	14744	0929	02617	0835
0800	0310	34317	064 B	2735	14753	1011	03248	0787
1000	0282	34392	058 B	2744	14776	1163	04646	0714
1200	0257	34446	061 B	2750	14799	1302	06214	0658
1500	0227	34512	079 B	2758	14838	1492	08841	0591
2000	0194	34590	137 B	2767	14909	1773	13870	0517
2500	0172 B	34627	199	2772	14986	2027	19744	0480
3000	0158	34657	254	2775	15066	2266	26519	0456
3500	0152	34671	281	2777	15151	2498	34321	0451

C-REF-NO 007	YR 1964	DEPTH C 3913	WAVES 1 23XX	AIR T 13.8	VIS B
CONS. NO 018	MONTH 9	MXSAMPD 04	WAVES 2 23XX	WET B 12.7	STN 012
LAT 49-49 N	DAY 21	NO.DPTH 14	WND-DIR 200	WW-CODE 02	
LON 142-40 W	HR 12.7	W-COLOR	WND-SPD 07	CLD-TPE 6	
MARSD SQ 159	C/I 1802	W-TRNSP	BARO 1014.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
127	0000	128 B	32625		2462	14972
127	0010	1259	32613		2465	14967
127	0020	1256 B	32612		2465	14967
127	0029	1256 B	32613		2465	14969
127	0049	1025	32676		2512	14891
127	0074	0592 B	32781		2583	14730
127	0098	0528	32791		2592	14708
127	0123	0504 B	32894		2603	14704
127	0147	0436 B	33350		2646	14686
127	0172	0404 B	33575		2667	14679
127	0196	0396 B	33688		2677	14681
127	0246	0386 B	33791		2686	14687
127	0295	0387 C	33869		2692	14696
127	0393	0378 B	34013		2705	14711

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1280 B	32625		2462	14972	0000	00000	3333
0010	1259	32613		2465	14967	0033	00002	3305
0020	1256 B	32612		2465	14967	0067	00007	3303
0030	1249 B	32615		2467	14967	0100	00015	3291
0050	1006 B	32681		2516	14884	0161	00040	2829
0075	0585 B	32781		2584	14728	0224	00079	2175
0100	0526	3279 B		2592	14708	0278	00127	2103
0125	0498 B	3293 C		2606	14702	0329	00186	1970
0150	0430 B	33387		2650	14684	0374	00248	1558
0175	0402 B	33593		2669	14679	0411	00310	1377
0200	0395 B	33700		2678	14682	0444	00374	1291
0225	0389 B	3376 B		2683	14684	0476	00444	1242
0250	0386 B	33798		2687	14688	0507	00519	1213
0300	0383 B	33882		2694	14696	0567	00687	1151
0400	0378 B	34021		2705	14712	0678	01084	1049

C-REF-NO 007	YR 1964	DEPTH C 3877	WAVES 1 2321	AIR T 13.8	VIS 7
CONS. NO 019	MONTH 9	MXSAMPD 15	WAVES 2 2324	WET B 13.3	STN 011
LAT 49-40 N	DAY 21	NO.DPTH 20	WND-DIR 230	WW-CODE 21	
LON 140-40 W	HR 20.7	W-COLOR 30	WND-SPD 07	CLD-TPE 7	
MARSD SQ 159	C/I 1802	W-TRNSP 12	BARO 1018.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
214	0000	130 B	32576		2454	14978
214	0010	1269	32570		2459	14970
214	0020	1263 B	32566		2460	14969
214	0030	1258 B	32570		2462	14969
214	0050	0877	32719		2539	14837
214	0075	0604 B	32786		2582	14735
214	0100	0548	32823		2592	14717
214	0125	0523 B	33120		2618	14715
214	0150	0474 B	33534		2657	14704
214	0175	0451 B	33704		2673	14701
214	0200	0474 B	33804		2678	14716
214	0250	0446 B	33882		2687	14714
214	0300	0432 B	33956		2695	14717
214	0400	0388	34042		2706	14716
207	0500	0382 B	34140		2714	14732
207	0600	0372 B	34241		2723	14745
207	0800	0329 B	34327		2734	14762
207	1000	0294	34406		2744	14781
207	1200	0266	34473		2752	14803
207	1500	0233	34537		2760	14840

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300 B	32576		2454	14978	0000	00000	3406
0010	1269	32570		2459	14970	0034	00002	3355
0020	1263 B	32566		2460	14969	0068	00007	3350
0030	1258 B	32570		2462	14969	0101	00016	3340
0050	0877	32719		2539	14837	0161	00039	2603
0075	0604 B	32786		2582	14735	0221	00077	2193
0100	0548	32823		2592	14717	0275	00126	2103
0125	0523 B	33120		2618	14715	0325	00183	1855
0150	0474 B	33534		2657	14704	0367	00242	1494
0175	0451 B	33704		2673	14701	0403	00301	1344
0200	0474 B	33804		2678	14716	0436	00365	1296
0225	0465 C	3385 B		2683	14717	0469	00435	1252
0250	0446 B	33882		2687	14714	0500	00511	1212
0300	0432 B	33956		2695	14717	0559	00678	1147
0400	0388	34042		2706	14716	0670	01073	1044
0500	0382 B	34140		2714	14732	0772	01542	0973

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0372 B	34241		2723	14745	0866	02073	0895
0700	0352 B	3429 B		2730	14754	0954	02658	0841
0800	0329 B	34327		2734	14762	1037	03297	0800
1000	0294	34406		2744	14781	1190	04709	0716
1200	0266	34473		2752	14803	1328	06267	0648
1500	0233	34537		2760	14840	1515	08848	0579

C-REF-NO 007	YR 1964	DEPTH C 3886	WAVES 1 2221	AIR T 14.4	VIS 6
CONS. NO 020	MONTH 9	MXSAMPD 04	WAVES 2 2222	WET B 13.8	STN 010
LAT 49-35 N	DAY 22	NO.DPTH 14	WND-DIR 220	WW-CODE 50	
LON 138-40 W	HR 03.8	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 158	C/I 1802	W-TRNSP	BARO 1022.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
038	0000	135 B	32568		2443	14995
038	0010	1334	32563		2446	14991
038	0020	1321 B	32593		2451	14989
038	0030	1319 B	32598		2452	14990
038	0050	0957 B	32673		2523	14866
038	0075	0681 B	32716		2567	14765
038	0100	0634	32752		2576	14751
038	0125	0584 B	32965		2599	14738
038	0150	0558 C	33475		2642	14738
038	0175	0554 B	33742		2664	14744
038	0200	0538 B	33818		2672	14743
038	0250	0489 B	33878		2682	14732
038	0300	0459 B	33923		2689	14728
038	0400	0421 B	34008		2700	14730

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1350 B	32568		2443	14995	0000	00000	3507
0010	1334	32563		2446	14991	0035	00002	3482
0020	1321 B	32593		2451	14989	0070	00007	3438
0030	1319 B	32598		2452	14990	0104	00016	3433
0050	0957 B	32673		2523	14866	0167	00041	2758
0075	0681 B	32716		2567	14765	0231	00081	2340
0100	0634	32752		2576	14751	0289	00133	2258
0125	0584 B	32965		2599	14738	0343	00195	2041
0150	0558 C	33475		2642	14738	0389	00260	1632
0175	0554 B	33742		2664	14744	0428	00324	1431
0200	0538 B	33818		2672	14743	0463	00391	1358
0225	0514 B	3386 B		2678	14737	0496	00464	1304
0250	0489 B	33878		2682	14732	0529	00543	1263
0300	0459 B	33923		2689	14728	0591	00718	1201
0400	0421 B	34008		2700	14730	0707	01134	1105

C-REF-NO 007	YR 1964	DEPTH C 3767	WAVES 1 20XX	AIR T 14.4	VIS 8
CONS. NO 021	MONTH 9	MXSAMPD 35	WAVES 2 20XX	WET B 13.8	STN 009
LAT 49-25 N	DAY 22	NO.DPTH 24	WND-DIR 200	WW-CODE 02	
LON 136-40 W	HR 10.4	W-COLOR	WND-SPD 02	CLD-TPE 6	
MARSD SQ 158	C/I 1802	W-TRNSP	BARO 1024.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
104	0000	139 B	32415		2423	15007
104	0010	1350	32407		2431	14995
104	0020	1338 B	32447		2436	14993
104	0030	1338 B	32448		2436	14995
104	0050	0873	32590		2530	14834
104	0075	0654 B	32678		2567	14754
104	0100	0607	32783		2582	14741
104	0125	0560 B	33100		2612	14730
104	0150	0553 C	33655		2657	14739
104	0175	0549 B	33770		2667	14743
104	0200	0541 B	33856		2674	14745
104	0250	0489 B	33862		2681	14731
104	0300	0456 C	33896		2687	14727
104	0400	0418	34013		2701	14729
112	0500	0403 B	34104		2709	14740
112	0600	0389 B	34193		2718	14752
112	0800	0337 B	34312		2732	14765
112	1000	0301	34383		2741	14784
112	1200	0268	34448		2750	14804
112	1500	0232	34530		2759	14840
112	2000	0191	34600		2768	14908
112	2500	0170 B	34640		2773	14985
112	3000	0158	34660		2775	15066
112	3500	0155	34680		2777	15152

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1390 B	32415		2423	15007	0000	00000	3696
0010	1350	32407		2431	14995	0037	00002	3627
0020	1338 B	32447		2436	14993	0073	00007	3578
0030	1338 B	32448		2436	14995	0109	00017	3579
0050	0873	32590		2530	14834	0172	00042	2693
0075	0654 B	32678		2567	14754	0235	00081	2334
0100	0607	32783		2582	14741	0292	00132	2202
0125	0560 B	33100		2612	14730	0344	00192	1912
0150	0553 C	33655		2657	14739	0387	00252	1492
0175	0549 B	33770		2667	14743	0423	00312	1404
0200	0541 B	33856		2674	14745	0458	00378	1333
0225	0517 B	3387 D		2678	14739	0491	00451	1297

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0250	0489 B	33862		2681	14731	0524	00530	1275
0300	0456 C	33896		2687	14726	0586	00707	1218
0400	0418	34013		2701	14729	0703	01124	1098
0500	0403 B	34104		2709	14740	0810	01617	1022
0600	0389 B	34193		2718	14752	0910	02178	0949
0700	0364 B	34260		2726	14759	1002	02793	0880
0800	0337 B	34312		2732	14765	1088	03455	0819
1000	0301	34383		2741	14784	1246	04909	0741
1200	0268	34448		2750	14804	1389	06518	0668
1500	0232	34530		2759	14840	1579	09147	0583
2000	0191	34600		2768	14908	1856	14089	0506
2500	0170 B	34640		2773	14985	2104	19826	0468
3000	0158	34660		2775	15066	2339	26505	0454
3500	0155	34680		2777	15153	2570	34273	0450

C-REF-NO 007	YR 1964	DEPTH C 3557	WAVES 1 2021	AIR T 14.4	VIS 2
CONS. NO 022	MONTH 9	MXSAMPD 04	WAVES 2 2024	WET B 14.4	STN 008
LAT 49-15 N	DAY 22	NO.DPTH 14	WND-DIR 200	WW-CODE 47	
LON 134-40 W	HR 18.7	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 158	C/I 1802	W-TRNSP	BARO 1026.0	CLD-AMT 9	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
187	0000	140 B	32460		2425	15010
187	0010	1362	32460		2433	14999
187	0020	1346 B	32470		2437	14996
187	0030	1345 B	32460		2436	14997
187	0050	0962	32660		2521	14868
187	0075	0699 B	32700		2563	14772
187	0100	0640	32750		2575	14753
187	0125	0583 B	32840		2589	14736
187	0150	0575 C	33300		2626	14743
187	0175	0568 B	33620		2652	14748
187	0200	0555 B	33720		2662	14748
187	0250	0527 B	33840		2675	14747
187	0300	0487 C	33910		2685	14740
187	0400	0424 B	33960		2696	14730

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1400 B	32460		2425	15010	0000	00000	3683
0010	1362	32460		2433	14999	0037	00002	3612
0020	1346 B	32470		2437	14996	0073	00007	3576
0030	1345 B	32460		2436	14997	0109	00017	3584
0050	0962	32660		2521	14868	0173	00042	2775
0075	0699 B	32700		2563	14772	0237	00083	2375
0100	0640	32750		2575	14753	0296	00135	2266
0125	0583 B	32840		2589	14736	0351	00199	2133
0150	0575 C	33300		2626	14743	0401	00268	1783
0175	0568 B	33620		2652	14748	0442	00337	1539
0200	0555 B	33720		2662	14748	0480	00409	1451
0225	0542 B	33790		2669	14748	0516	00487	1387
0250	0527 B	33840		2675	14747	0550	00571	1335
0300	0487 C	33910		2685	14739	0615	00754	1242
0400	0424 B	33960		2696	14730	0735	01184	1144

See Special Note Page 16 Re: Salinity Data

C-REF-NO 007 YR 1964 DEPTH C 3273 WAVES 1 21X2 AIR T 14.9 VIS 8
 CONS. NO 023 MONTH 9 MXSAMPD 04 WAVES 2 21X5 WET B 14.4 STN 007
 LAT 49-10 N DAY 23 NO.DPTH 14 WND-DIR 210 WW-CODE 02
 LON 132-40 W HR 00.6 W-COLOR WND-SPD 07 CLD-TPE 7
 MARSD SQ 158 C/I 1802 W-TRNSP BARO 1028.0 CLD-AMT 8 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
006	0000	141 B	32430		2420	15013
006	0010	1360	32450		2432	14999
006	0020	1346 B	32430		2433	14995
006	0030	1344 B	32430		2434	14996
006	0050	0820	32469		2528	14812
006	0075	0696 B	32628		2558	14770
006	0100	0664	32848		2580	14764
006	0125	0608 B	33108		2607	14749
006	0150	0646 B	33502		2633	14774
006	0175	0635 B	33729		2653	14777
006	0200	0595 B	33804		2664	14766
006	0250	0534 B	33852		2675	14750
006	0300	0519 B	33923		2682	14753
006	0400	0426 B	33964		2696	14731

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1410 B	32430		2420	15013	0000	00000	3725
0010	1360	32450		2432	14999	0037	00002	3615
0020	1346 B	32430		2433	14995	0073	00007	3605
0030	1344 B	32430		2434	14996	0109	00017	3604
0050	0820	32469		2528	14812	0173	00042	2707
0075	0696 B	32628		2558	14770	0237	00083	2425
0100	0664	32848		2580	14764	0296	00135	2223
0125	0608 B	33108		2607	14749	0349	00195	1963
0150	0646 B	33502		2633	14774	0395	00260	1719
0175	0635 B	33729		2653	14777	0436	00328	1540
0200	0595 B	33804		2664	14766	0473	00400	1437
0225	0560 B	3384 B		2670	14756	0509	00477	1374
0250	0534 B	33852		2675	14750	0543	00561	1334
0300	0519 B	33923		2682	14753	0609	00745	1269
0400	0426 B	33964		2696	14731	0730	01180	1143

See Special Note Page 16 Re: Salinity Data

C-REF-NO 007	YR 1964	DEPTH C 2935	WAVES 1 2021	AIR T 14.4	VIS 6
CONS. NO 024	MONTH 9	MXSAMPD 15	WAVES 2 2023	WET B 13.8	STN 006
LAT 49-02 N	DAY 23	NO.DPTH 20	WND-DIR 200	WW-CODE 02	
LON 130-40 W	HR 06.9	W-COLOR	WND-SPD 07	CLD-TPE 7	
MARSD SQ 158	C/I 1802	W-TRNSP	BARD 1030.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
069	0000	140 B	32215		2406	15007
069	0010	1376	32240		2413	15001
069	0020	1359 B	32228		2415	14997
069	0029	1356 B	32285		2420	14998
069	0049	0811	32538		2535	14809
069	0074	0682 B	32594		2557	14764
069	0098	0664	32760		2573	14763
069	0123	0660 B	32970		2590	14768
069	0148	0652 B	33411		2625	14775
069	0173	0642 B	33698		2649	14779
069	0198	0621 B	33841		2663	14776
069	0248	0572 B	33908		2675	14766
069	0298	0522 B	33934		2683	14754
069	0398	0468 B	34009		2695	14749
074	0500	0432 B	34119		2707	14752
074	0600	0407 B	34203		2717	14760
074	0800	0362 B	34316		2730	14775
074	1000	0319	34399		2741	14792
074	1200	0278	34460		2750	14808
074	1500	0238	34517		2758	14842

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1400 B	32215		2406	15007	0000	00000	3863
0010	1376	32240		2413	15001	0038	00002	3800
0020	1359 B	32228		2415	14997	0077	00008	3779
0030	1333 E	32298		2426	14991	0114	00017	3680
0050	0799 B	32542		2537	14805	0177	00042	2623
0075	0680 B	32599		2558	14763	0241	00083	2426
0100	0663	32772		2574	14763	0300	00135	2279
0125	0659 B	3300 B		2592	14769	0355	00199	2104
0150	0651 B	33439		2628	14775	0404	00267	1773
0175	0641 B	33713		2651	14779	0446	00337	1558
0200	0619 B	33847		2664	14776	0484	00409	1435
0225	0595 B	3390 D		2671	14771	0519	00486	1370
0250	0570 B	33909		2675	14765	0553	00569	1334
0300	0521 B	33935		2683	14754	0619	00753	1262
0400	0467 B	34011		2695	14749	0741	01189	1154
0500	0432 B	34119		2707	14752	0851	01699	1043

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0600	0407 B	34203		2717	14760	0953	02269	0962
0700	0384 B	34266		2724	14767	1047	02895	0898
0800	0362 B	34316		2730	14775	1135	03573	0844
1000	0319	34399		2741	14792	1296	05056	0749
1200	0278	34460		2750	14808	1440	06677	0671
1500	0238	34517		2758	14842	1633	09348	0600

C-REF-NO 007	YR 1964	DEPTH C 2532	WAVES 1 19X1	AIR T 14.4	VIS 7
CONS. NO 025	MONTH 9	MXSAMPD 04	WAVES 2 21X3	WET B 13.8	STN 005
LAT 48-42 N	DAY 23	NO.DPTH 14	WND-DIR 220	WW-CODE 02	
LON 128-40 W	HR 13.8	W-COLOR	WND-SPD 02	CLD-TPE 7	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1031.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
138	0000	140 B	31945		2385	15004
138	0010	1374	31944		2390	14997
138	0020	1354 B	31947		2395	14992
138	0030	1114 B	32119		2453	14913
138	0050	0954	32370		2500	14861
138	0075	0750 B	32583		2547	14791
138	0100	0689	32716		2566	14773
138	0125	0696 B	33256		2607	14787
138	0150	0665 B	33617		2640	14783
138	0175	0648 B	33792		2656	14783
138	0200	0621 B	33847		2664	14777
138	0250	0564 B	33891		2674	14763
138	0300	0517 B	33916		2682	14752
138	0400	0480 B	34050		2697	14755

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1400 B	31945		2385	15004	0000	00000	4061
0010	1374	31944		2390	14997	0041	00002	4014
0020	1354 B	31947		2395	14992	0081	00008	3975
0030	1114 B	32119		2453	14913	0118	00018	3418
0050	0954	32370		2500	14861	0182	00043	2978
0075	0750 B	32583		2547	14791	0251	00087	2529
0100	0689	32716		2566	14773	0313	00142	2353
0125	0696 B	33256		2607	14786	0367	00204	1964
0150	0665 B	33617		2640	14783	0413	00268	1658
0175	0648 B	33792		2656	14783	0453	00334	1509
0200	0621 B	33847		2664	14777	0490	00405	1437
0225	0592 B	33876		2670	14770	0525	00483	1383
0250	0564 B	33891		2674	14763	0560	00566	1341
0300	0517 B	33916		2682	14752	0626	00752	1272
0400	0480 B	34050		2697	14755	0747	01186	1140

C-REF-NO 007 YR 1964 DEPTH C 2496 WAVES 1 2421 AIR T 14.9 VIS 0
 CONS. NO 026 MONTH 9 MXSAMPD 24 WAVES 2 2023 WET B 14.9 STN 004
 LAT 48-46 N DAY 23 NO.DPTH 22 WND-DIR 240 WW-CODE 47
 LON 127-40 W HR 17.3 W-COLOR 40 WND-SPD 02 CLD-TPE X
 MARSD SQ 157 C/I 1802 W-TRNSP 15 BARO 1031.0 CLD-AMT 9 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
173	0000	149 B	31946		2366	15033
173	0010	1460	31938		2372	15025
173	0020	1410 B	31932		2382	15010
173	0030	0935 B	32335		2500	14851
173	0050	0774	32536		2540	14795
173	0075	0706 B	32769		2568	14776
173	0100	0702	33375		2616	14786
173	0125	0689 B	33692		2643	14789
173	0150	0682 B	33833		2655	14793
173	0175	0657 B	33895		2663	14788
173	0200	0635 B	33920		2668	14783
173	0250	0588 B	33949		2676	14773
173	0300	0531 B	33960		2684	14758
173	0400	0531 C	34095		2694	14777
179	0500	0488	34168		2705	14776
179	0600	0444 B	34230		2715	14776
179	0800	0388 B	34328		2729	14787
179	1000	0344	34410		2740	14802
179	1200	0290	34456		2748	14813
179	1500	0243	34523		2758	14845
179	2000	0191	34605		2768	14908
179	2400	0178	34638		2772	14971

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1490 B	31946		2366	15033	0000	00000	4240
0010	1460	31938		2372	15025	0042	00002	4187
0020	1410 B	31932		2382	15010	0084	00009	4095
0030	0935 B	32335		2500	14851	0119	00017	2971
0050	0774	32536		2540	14795	0175	00040	2593
0075	0706 B	32769		2568	14776	0237	00079	2333
0100	0702	33375		2616	14786	0290	00126	1879
0125	0689 B	33692		2643	14789	0335	00177	1630
0150	0682 B	33833		2655	14793	0374	00232	1519
0175	0657 B	33895		2663	14788	0412	00294	1444
0200	0635 B	33920		2668	14783	0447	00363	1401
0225	0612 B	33937		2672	14779	0482	00439	1362
0250	0588 B	33949		2676	14773	0516	00522	1327
0300	0531 B	33960		2684	14758	0581	00705	1255

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0400	0531 C	34095		2694	14777	0703	01142	1166
0500	0488	34168		2705	14776	0816	01662	1072
0600	0444 B	34230		2715	14776	0920	02246	0984
0700	0413 B	34282		2722	14780	1016	02887	0918
0800	0388 B	34328		2729	14787	1106	03581	0865
1000	0344	34410		2740	14802	1272	05102	0769
1200	0290	34456		2748	14813	1419	06764	0687
1500	0243	34523		2758	14845	1615	09470	0601
2000	0191	34605		2768	14908	1896	14463	0502

C-REF-NO 007	YR 1964	DEPTH C 1298	WAVES 1 49XX	AIR T 16.6	VIS B
CONS. NO 027	MONTH 9	MXSAMPD 12	WAVES 2 22XX	WET B 15.5	STN 003
LAT 48-41 N	DAY 23	NO.DPTH 19	WND-DIR 990	WW-CODE 02	
LON 126-40 W	HR 21.6	W-COLOR	WND-SPD 01	CLD-TPE 6	
MARSD SQ 157	C/I 1802	W-TRNSP	BARO 1031.0	CLD-AMT 8	HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
216	0000	149 B	31012		2295	15022
216	0009	1468	31989		2374	15028
216	0019	1424 B	31966		2382	15015
216	0028	1421 B	31981		2384	15016
216	0047	0807	32524		2534	14807
216	0070	0702 B	32620		2557	14772
216	0094	0708	32971		2583	14782
216	0117	0694 B	33309		2612	14785
216	0141	0704 B	33701		2641	14798
216	0164	0706 B	33858		2653	14805
216	0188	0689 B	33889		2658	14802
216	0234	0625 B	33946		2671	14785
216	0281	0573 B	33963		2679	14772
216	0375	0530 B	34030		2689	14771
220	0483	0498 B	34122		2700	14777
220	0581	0458	34191		2710	14778
220	0779	0406 B	34306		2725	14790
220	0982	0348	34399		2738	14801
220	1182	0307	34471		2748	14818

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1490 B	31012		2295	15022	0000	00000	4924
0010	1463	3201 F		2377	15027	0045	00002	4139
0020	1427 C	31963		2381	15016	0087	00008	4107
0030	1365 I	3203 F		2399	14998	0127	00019	3936
0050	0770 F	3255 E		2541	14794	0193	00044	2580
0075	0699 C	3268 B		2562	14772	0255	00084	2388
0100	0704	33057		2591	14783	0312	00134	2119
0125	0696 B	3345 C		2623	14789	0362	00191	1819
0150	0706 B	33783		2647	14802	0405	00251	1589
0175	0700 B	3388 B		2656	14805	0444	00316	1511
0200	0674 B	33906		2661	14799	0481	00388	1461
0225	0639 B	33937		2669	14789	0517	00467	1396
0250	0605 B	33954		2674	14780	0552	00551	1345
0300	0560 B	33974		2681	14770	0618	00737	1280
0400	0522 B	34051		2692	14772	0742	01182	1188
0500	0491 B	34135		2702	14777	0858	01714	1100
0600	0452	34203		2712	14779	0965	02315	1013

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0700	0425 B	34264		2720	14784	1064	02975	0946
0800	0400 B	34317		2727	14791	1156	03688	0887
1000	0347 B	34407		2739	14804	1324	05234	0775
1200	0303	34476		2749	14819	1473	06902	0687

C-REF-NO 007 YR 1964 DEPTH C 109 WAVES 1 49XX AIR T 14.4 VIS 7
 CONS. NO 028 MONTH 9 MXSAMPD 01 WAVES 2 22XX WET B 13.8 STN 002
 LAT 48-38 N DAY 24 NO.DPTH 7 WND-DIR 990 WW-CODE 02
 LON 126-00 W HR 00.3 W-COLOR WND-SPD 01 CLD-TPE 6
 MARSD SQ 157 C/I 1802 W-TRNSP BARO 1030.0 CLD-AMT 4 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
003	0000	122 B	31170		2361	14934
003	0010	1098	31276		2391	14893
003	0020	1077 B	31689		2426	14893
003	0030	0870 B	32360		2512	14827
003	0050	0776	32679		2551	14798
003	0075	0742 B	33293		2604	14797
003	0100	0710	33694		2640	14794

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1220 B	31170		2361	14934	0000	00000	4296
0010	1098	31276		2391	14893	0042	00002	4011
0020	1077 B	31689		2426	14893	0080	00008	3672
0030	0870 B	32360		2512	14827	0113	00016	2856
0050	0776	32679		2551	14798	0167	00038	2489
0075	0742 B	33293		2604	14797	0223	00073	1990
0100	0710	33694		2640	14794	0269	00114	1652

C-REF-NO 007 YR 1964 DEPTH C 128 WAVES 1 20X1 AIR T 14.4 VIS
 CONS. NO 029 MONTH 9 MXSAMPD 01 WAVES 2 21X2 WET B 13.8 STN 001
 LAT 48-33 N DAY 24 NO.DPTH 7 WND-DIR 220 WW-CODE 02
 LON 125-33 W HR 02.6 W-COLOR WND-SPD 02 CLD-TPE 6
 MARSD SQ 157 C/I 1802 W-TRNSP BARO 1029.0 CLD-AMT 4 HW

O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
026	0000	116 B	31836		2423	14921
026	0010	1116	31887		2435	14908
026	0020	0935 B	32604		2521	14852
026	0030	0825 B	33041		2572	14818
026	0050	0733	33545		2625	14793
026	0074	0680 B	33744		2648	14778
026	0099	0671	33825		2655	14780

I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1160 B	31836		2423	14921	0000	00000	3700
0010	1116	31887		2435	14908	0037	00002	3589
0020	0935 B	32604		2521	14852	0069	00007	2770
0030	0825 B	33041		2572	14818	0094	00013	2285
0050	0733	33545		2625	14793	0135	00029	1786
0075	0675 B	3380 I		2653	14777	0177	00055	1521
0100	0672	33820		2655	14780	0215	00090	1509

SECTION IV

Bathymograms

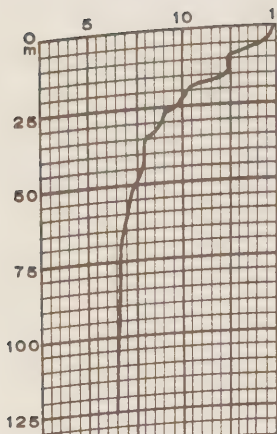
CCGS "ST. CATHARINES"

Daily bathythermograms

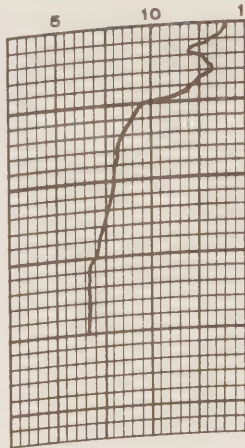
and

OCEAN series bathythermograms

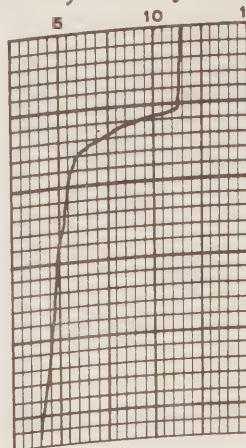
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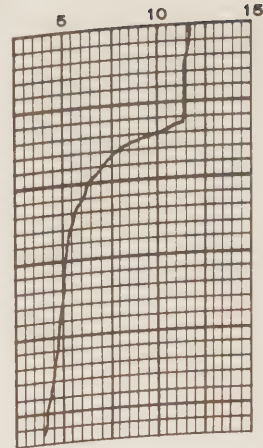
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48° 36' N
125° 30' W



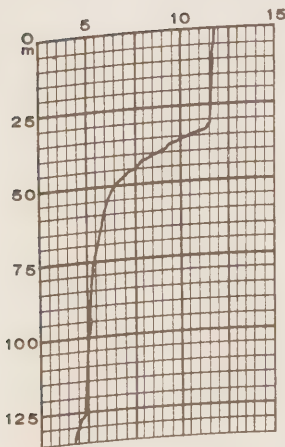
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48° 38' N
126° 00' W



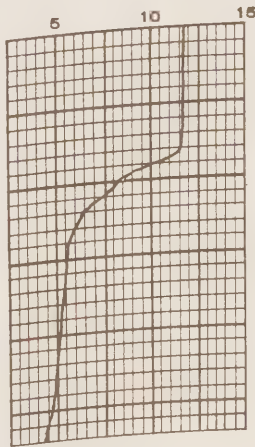
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50° 00' N
145° 00' W



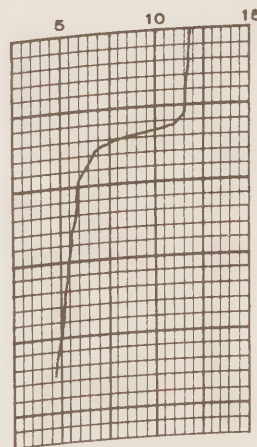
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49° 58' N
145° 00' W



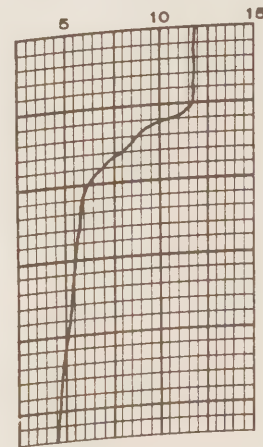
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145° 00' W



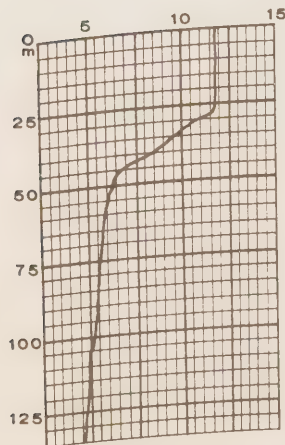
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145° 02' W



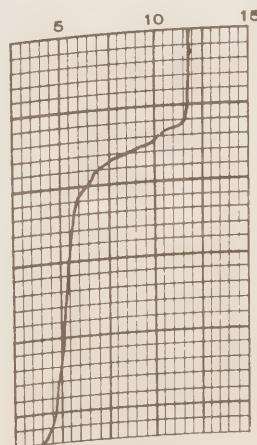
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145° 02' W



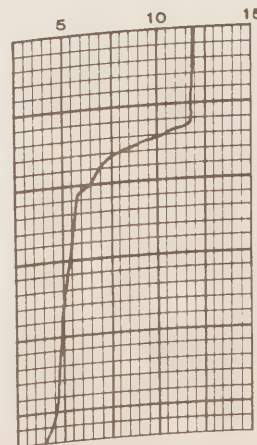
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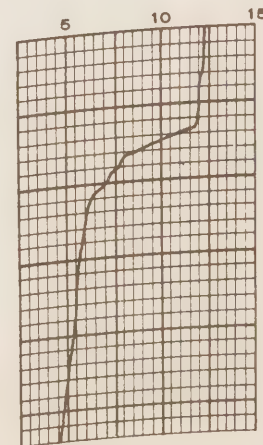
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49° 55' N
144° 52' W



64-08-20-02.0
50° 02' N
145° 02' W

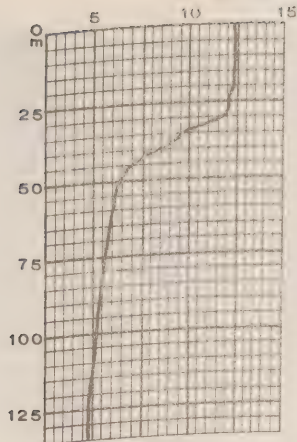


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145° 06' W

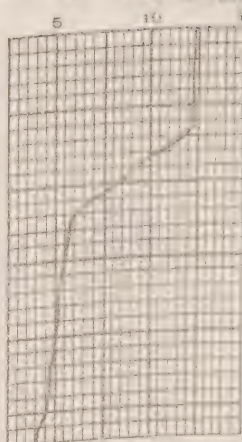


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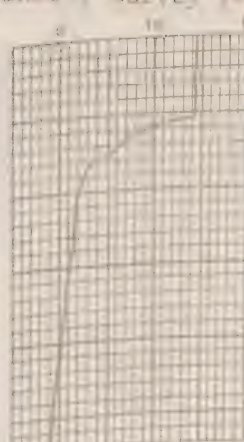
O.C.C.S. "St. Catharines", Survey 1964-3



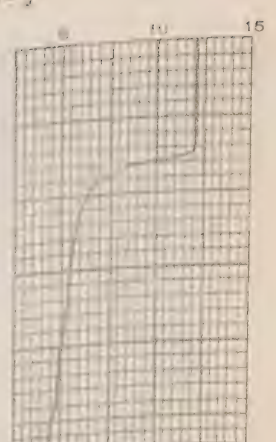
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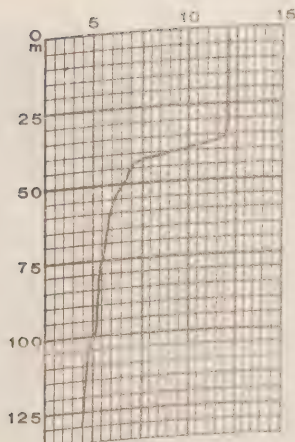
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144°56'W



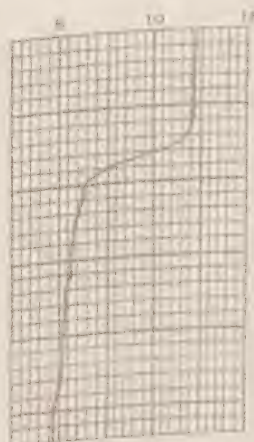
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145°01'W



64-08-28-02.0
50°02'N
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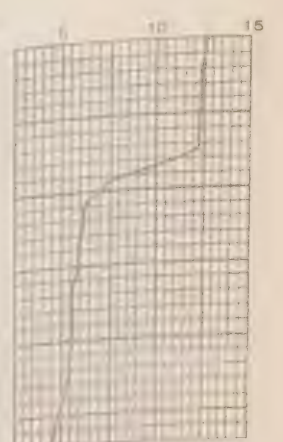
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145°12'W



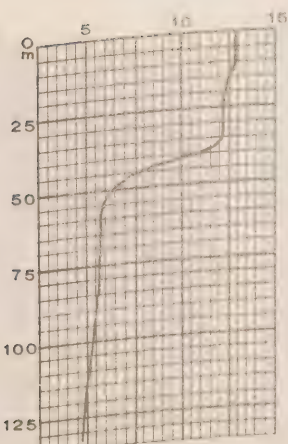
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145°02'W



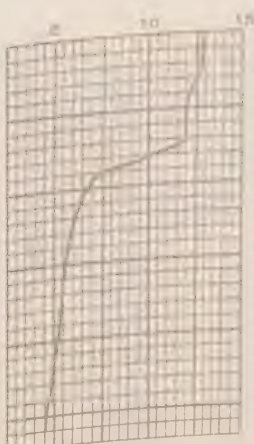
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50°00'N
145°00'W



64-09-01-02.0
50°04'N
145°00'W



64-09-03-02.0
49°56'N
145°00'W



64-09-04-02.0
49°58'N
145°00'W

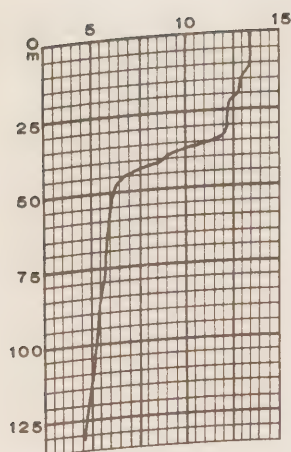


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145°05'W

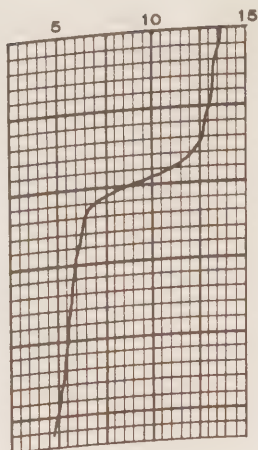


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144°57'W

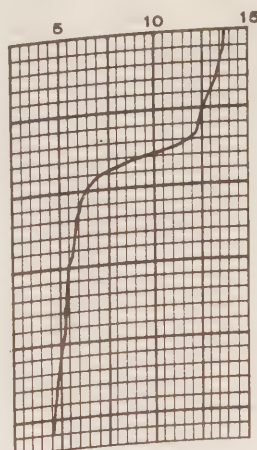
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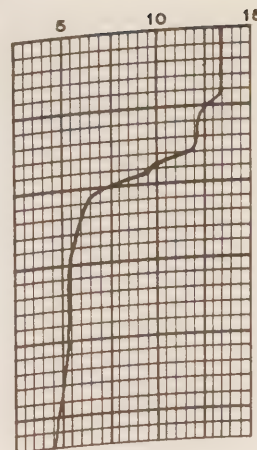
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49° 58' n
145° 00' w



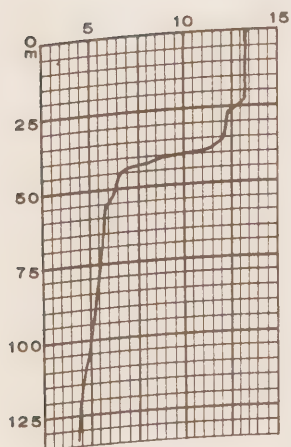
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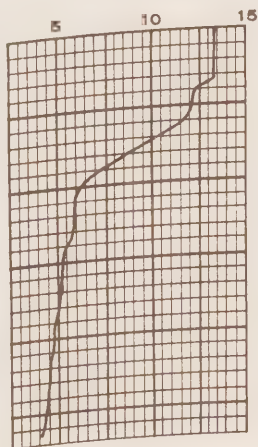
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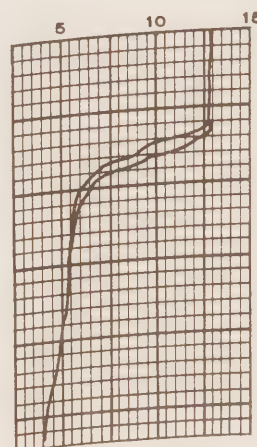
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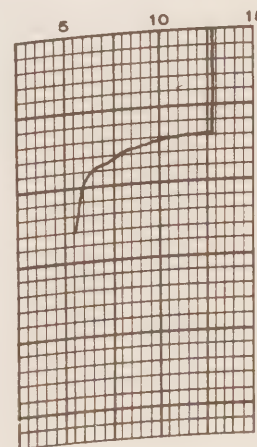
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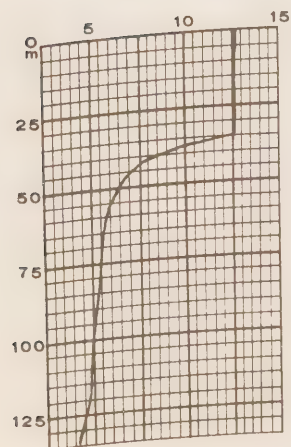
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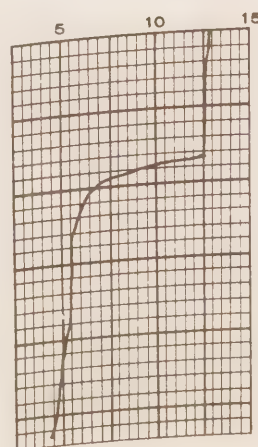
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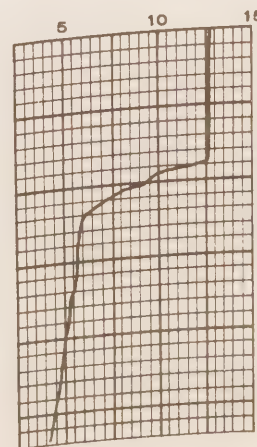
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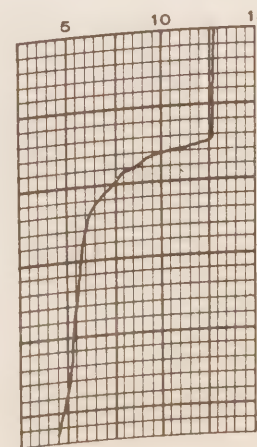
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145° 14' w



64-09-17-02.0
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145° 02' w

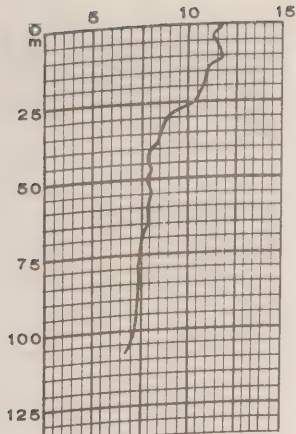


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145° 04' w



64-09-20-02.0
49° 57' n
145° 06' w

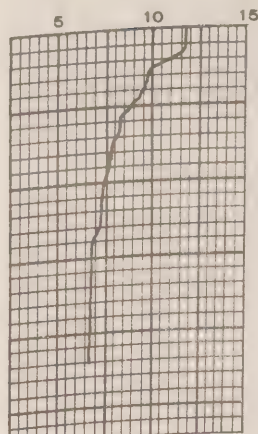
C.C.G.S. "St. Catharines", Survey P-64-3



*64-09-24-00.2

48° 38' n

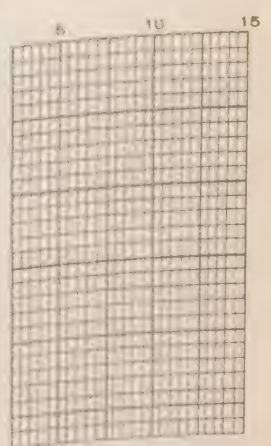
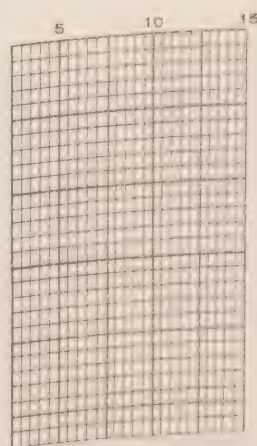
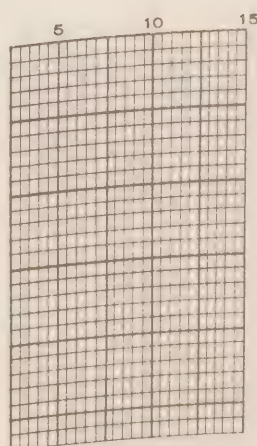
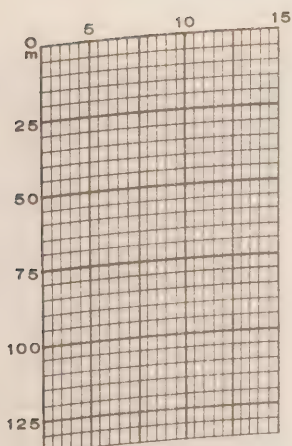
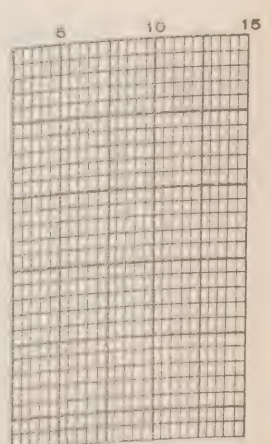
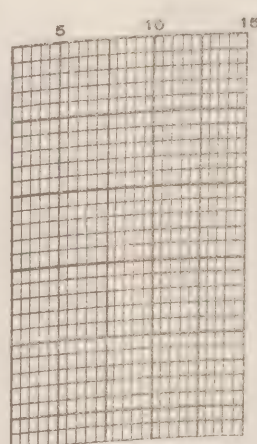
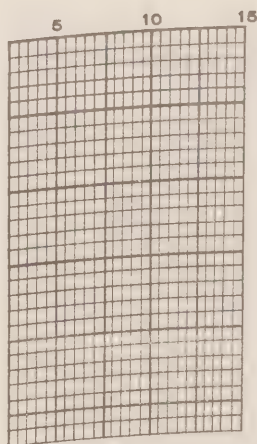
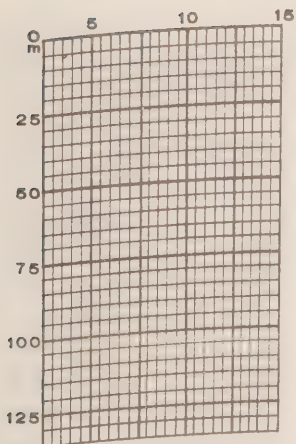
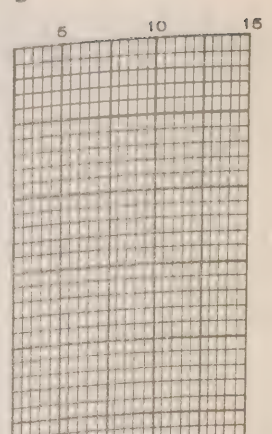
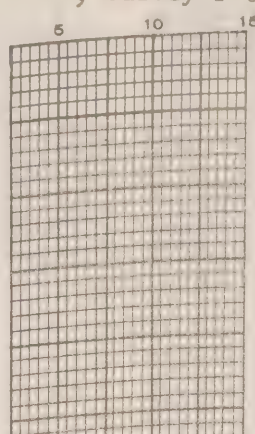
126° 00' w



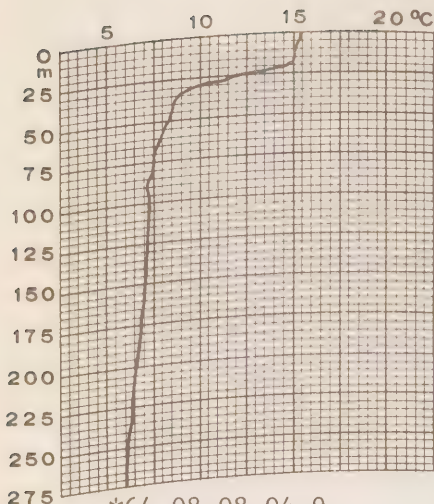
*64-09-24-02.5

48° 03' n

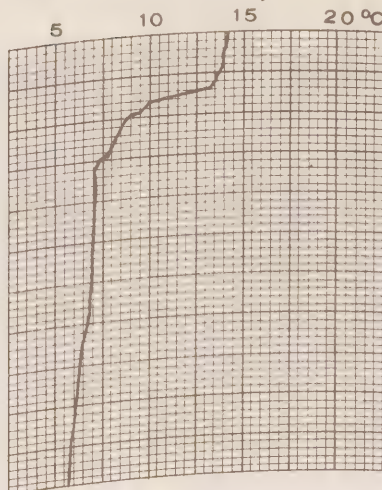
125° 33' w



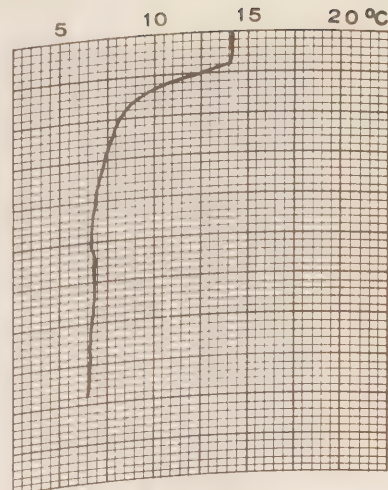
C.C.G.S. "St. Catharines", Survey P-64-3



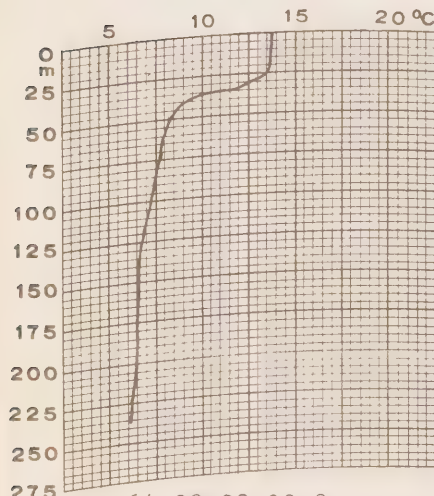
*64-08-08-04.9
48°42'N
126°40'W



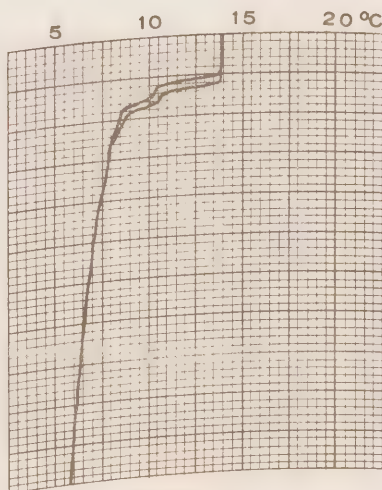
*64-08-08-09.8
48°42'N
127°40'W



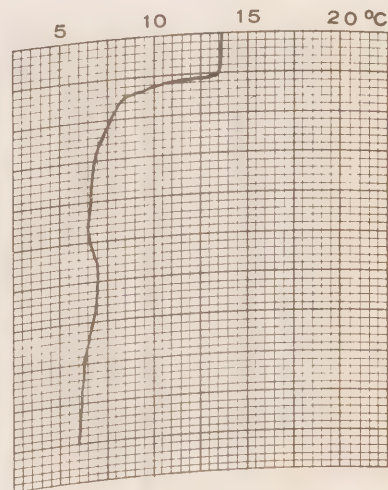
64-08-08-17.8
48°42'N
128°40'W



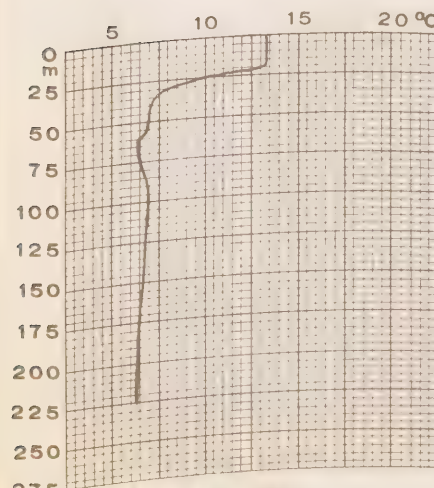
64-08-08-20.8
48°55'N
129°40'W



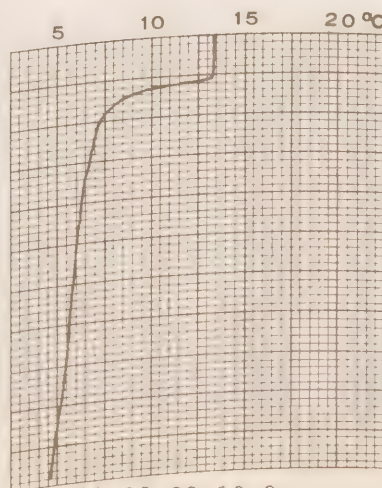
64-08-09-00.0
49°01'N
130°40'W



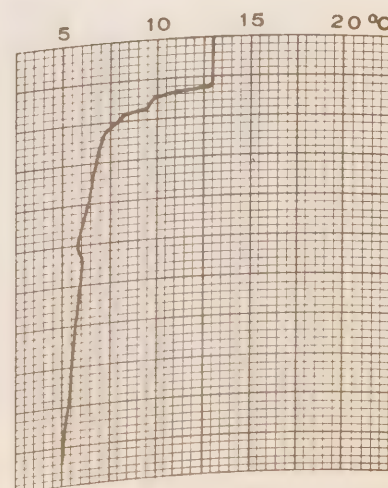
64-08-09-04.0
49°05'N
131°40'W



64-08-09-07.5
49°07'N
132°40'W

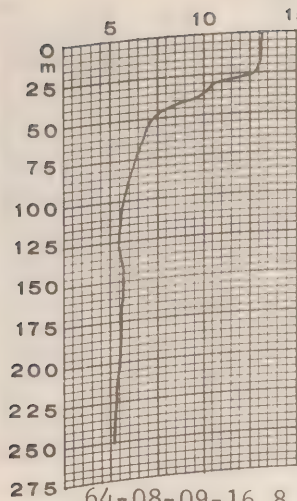


64-08-09-10.9
49°15'N
133°40'W

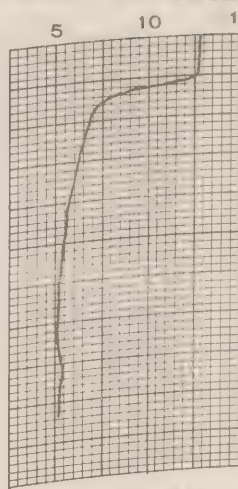


64-08-09-13.9
49°19'N
134°40'W

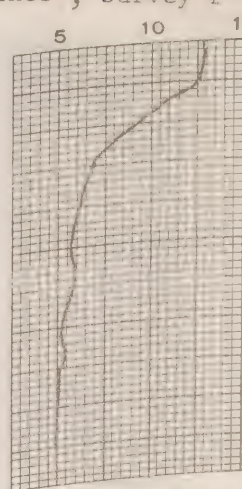
C.C.G.S. "St. Catharines", Survey P-64-3



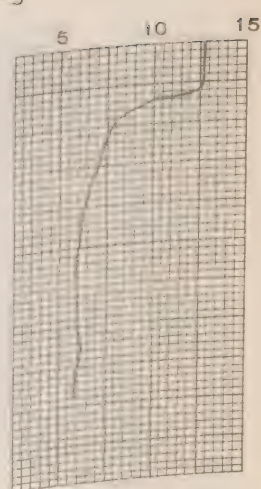
64-08-09-16.8
49°22'n
135°40'w



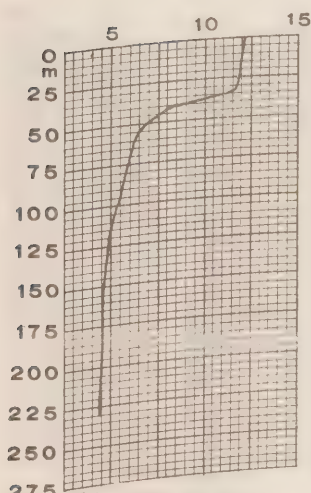
64-08-09-19.8
49°26'n
136°40'w



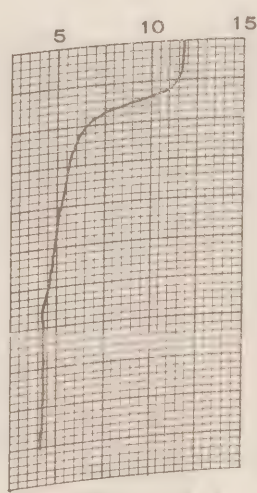
64-08-09-23.0
49°30'n
137°40'w



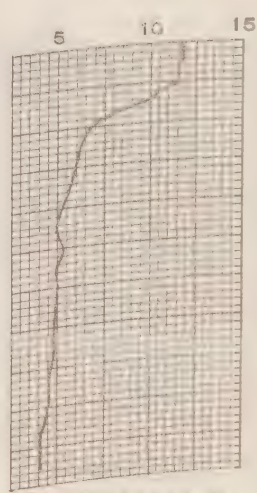
64-08-10-02.0
49°33'n
138°40'w



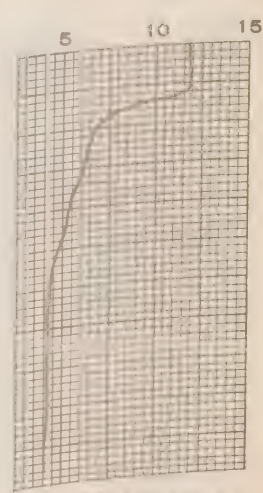
64-08-10-05.2
49°37'n
139°40'w



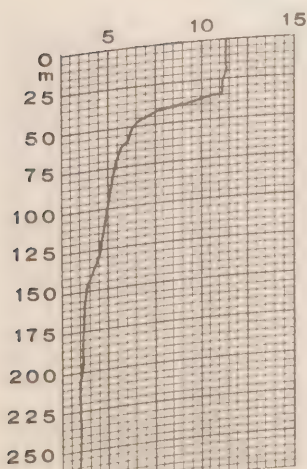
64-08-10-08.2
49°40'n
140°40'w



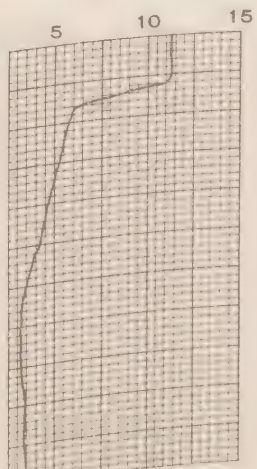
64-08-10-11.9
49°45'n
141°40'w



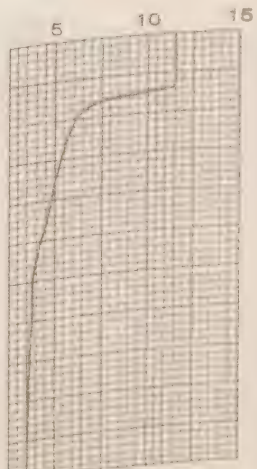
64-08-10-17.3
49°55'n
142°40'w



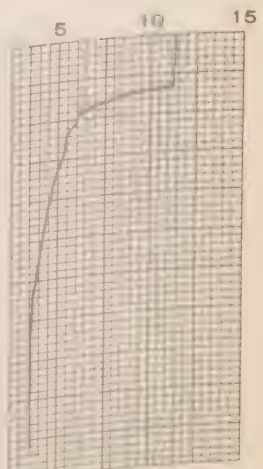
64-08-11-05.2
50°00'n
145°00'w



64-08-11-17.0
50°00'n
145°00'w

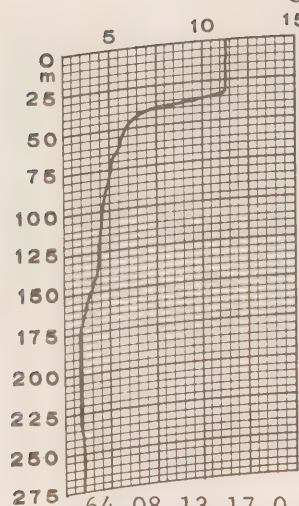


64-08-12-02.0
49°58'n
145°02'w

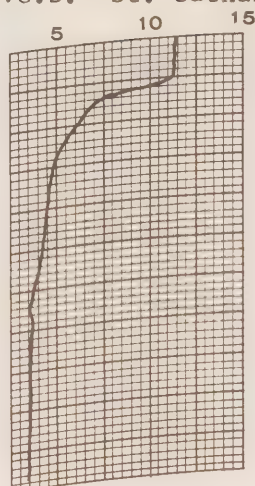


64-08-12-17.0
49°59'n
144°57'w

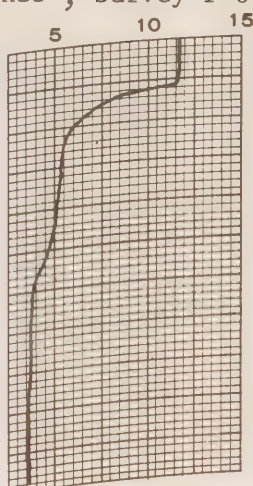
C.C.G.S. "St. Catharines", Survey P-64-3



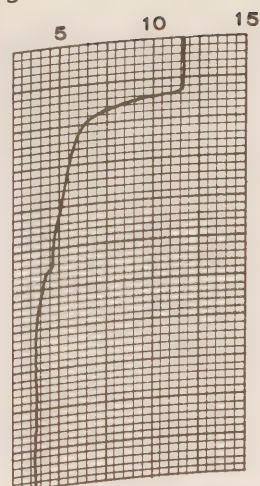
64-08-13-17.0
50°02'N
144°58'W



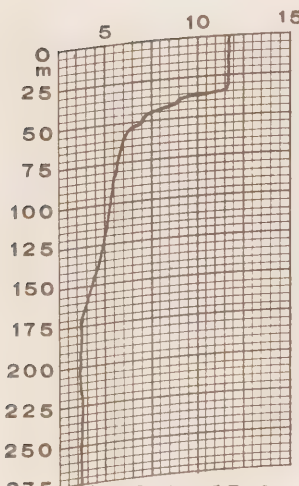
64-08-14-17.0
50°00'N
145°00'W



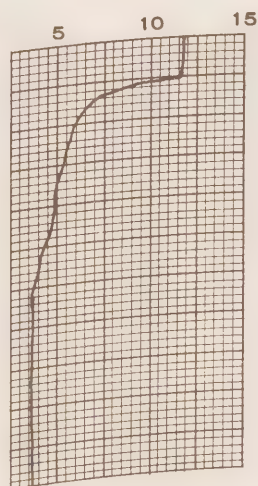
64-08-15-17.0
49°58'N
144°53'W



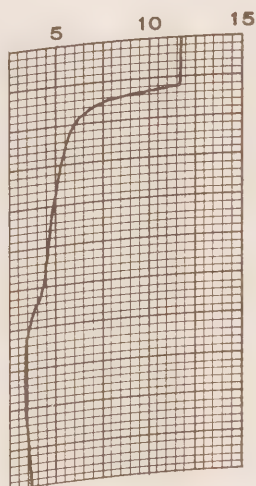
64-08-16-17.0
50°00'N
145°08'W



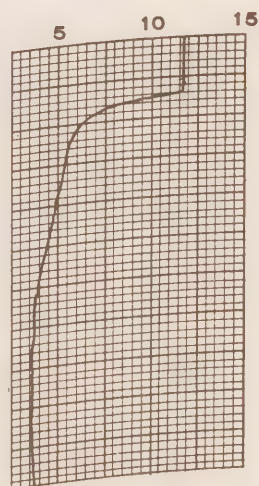
64-08-17-17.0
49°57'N
145°00'W



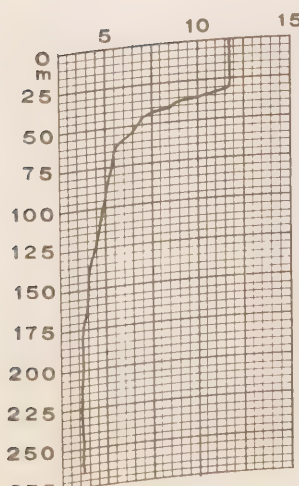
*64-08-17-18.2
49°58'N
144°59'W



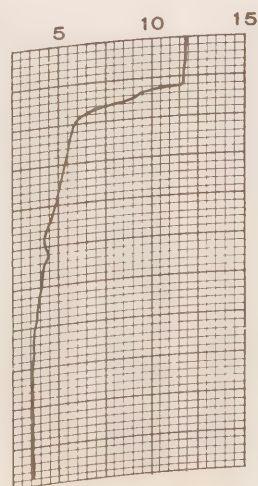
64-08-18-17.0
49°58'N
145°20'W



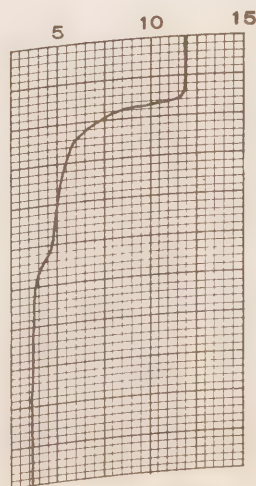
64-08-19-17.0
50°06'N
144°51'W



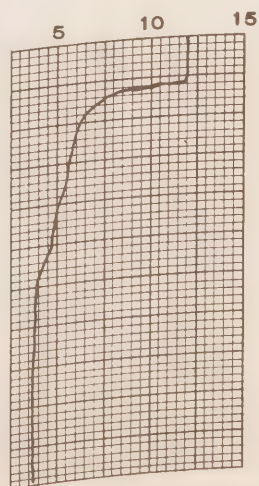
*64-08-19-18.5
50°06'N
144°52'W



64-08-20-17.0
50°05'N
144°54'W

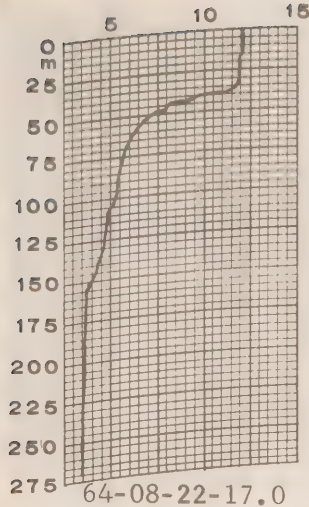


64-08-21-17.0
50°00'N
145°00'W

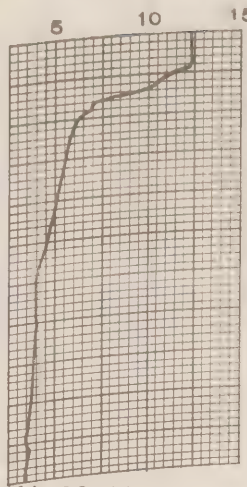


*64-08-21-18.5
50°03'N
144°57'W

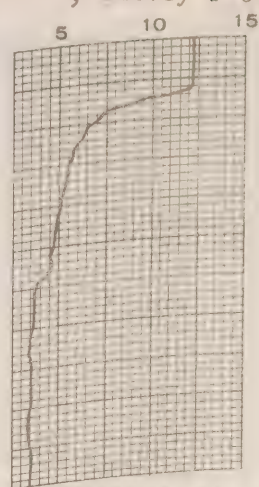
C.C.G.S. "St. Catharines", Survey P-64-3



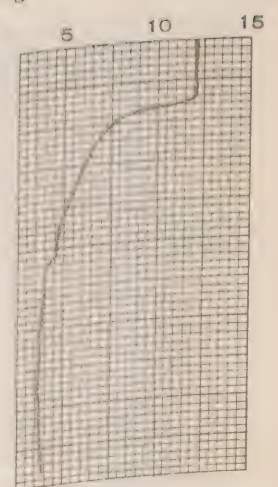
64-08-22-17.0
49°57'N
144°57'W



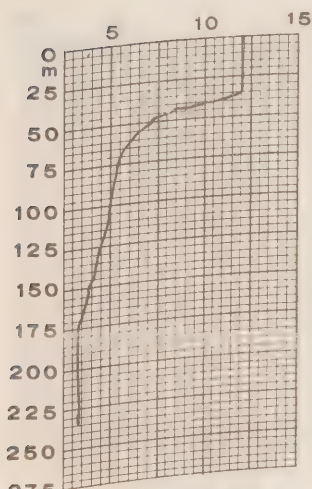
64-08-23-17.0
49°55'N
145°03'W



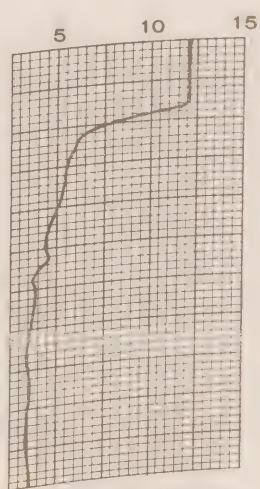
64-08-24-17.0
49°58'N
144°55'W



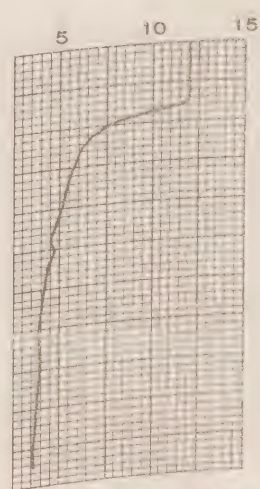
64-08-25-17.0
49°58'N
144°52'W



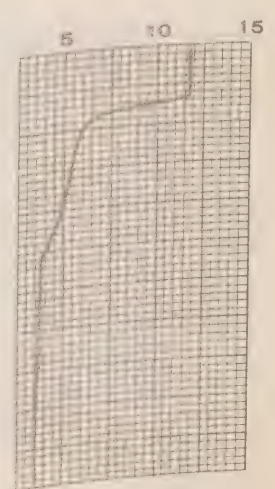
*64-08-25-19.4
49°50'N
144°56'W



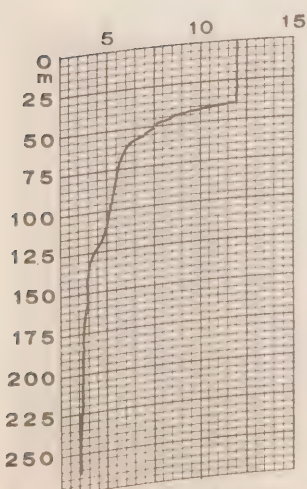
64-08-26-17.0
50°03'N
144°56'W



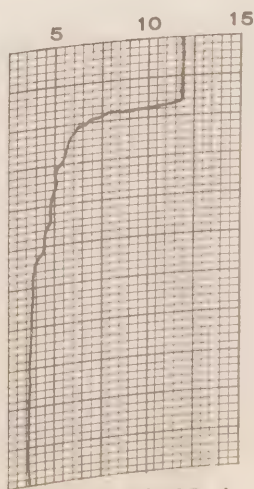
64-08-27-17.0
49°57'N
144°53'W



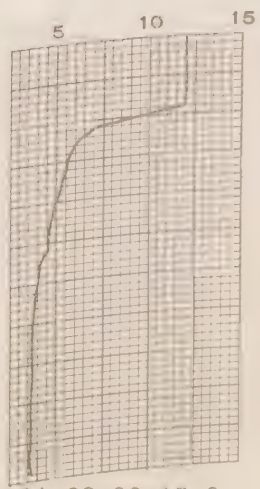
64-08-28-17.0
49°52'N
144°57'W



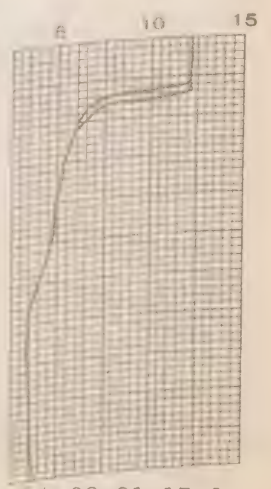
64-08-29-17.0
49°54'N
144°52'W



*64-08-29-18.4
50°00'N
145°00'W

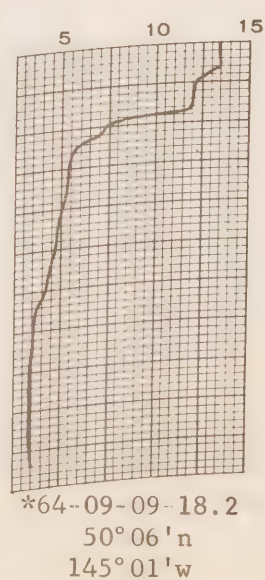
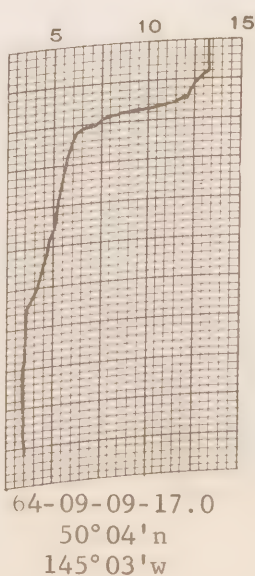
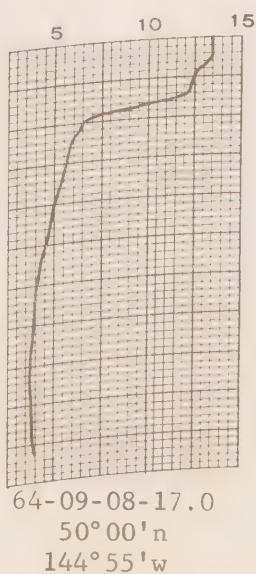
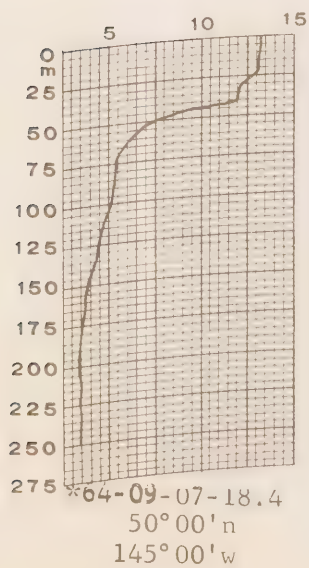
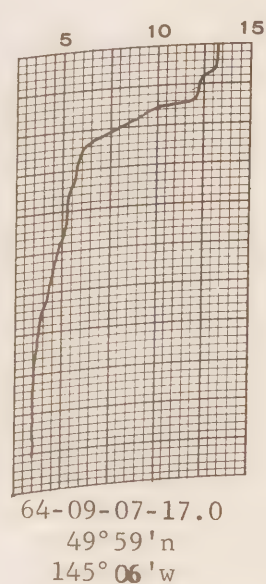
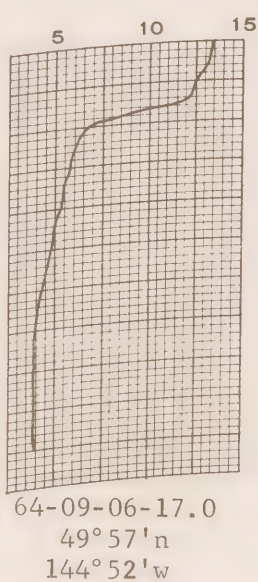
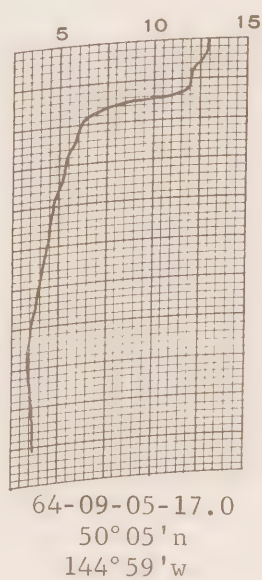
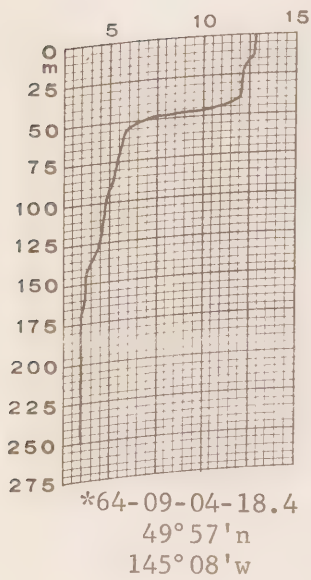
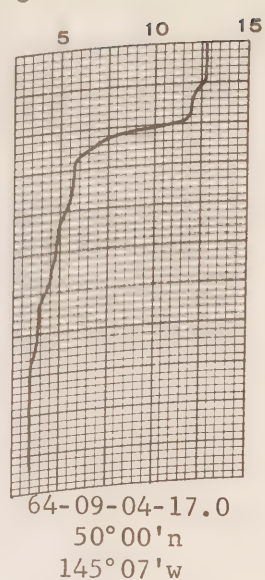
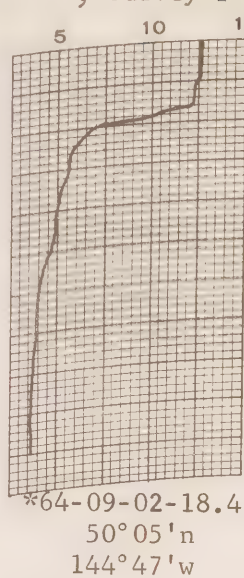
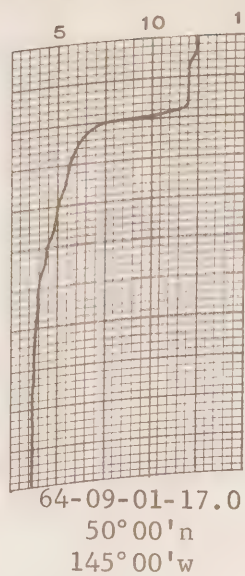
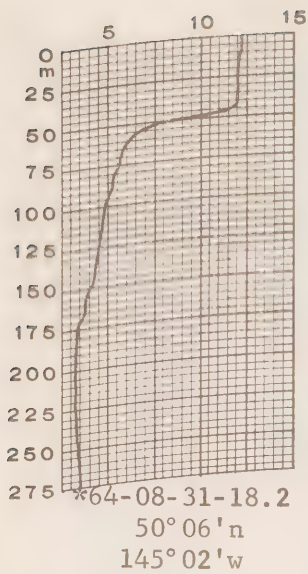


64-08-30-17.0
49°56'N
144°51'W

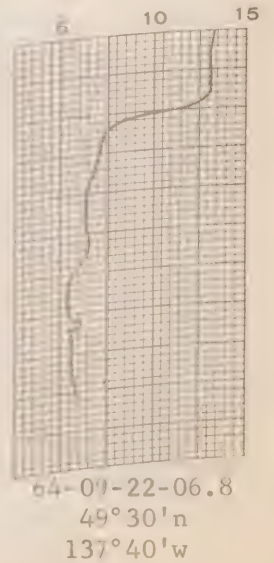
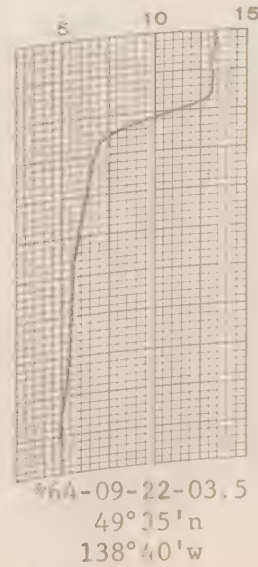
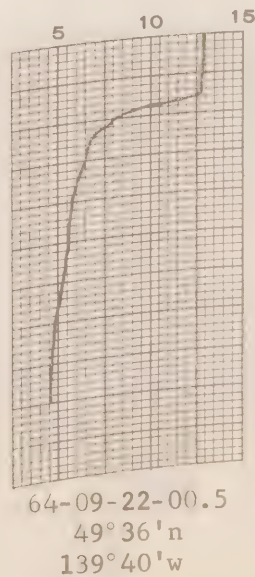
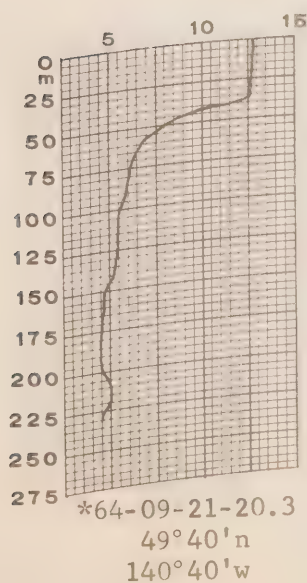
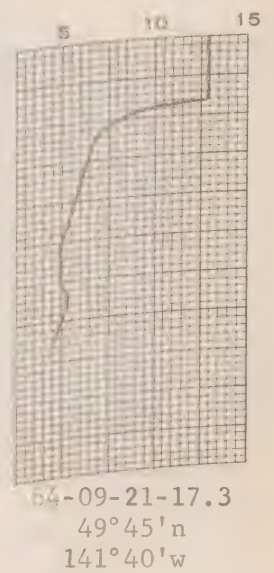
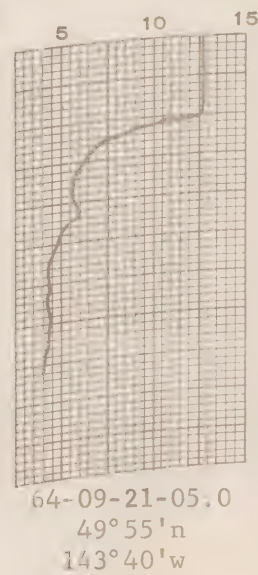
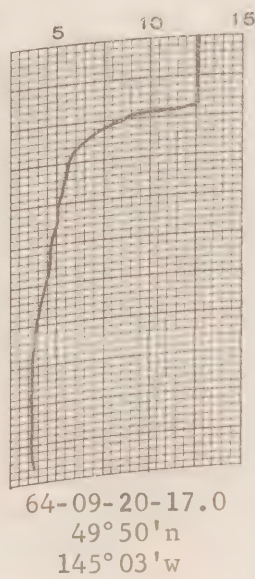
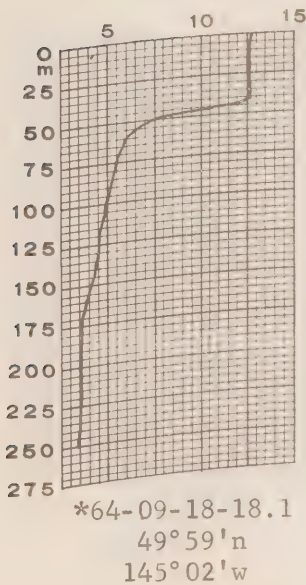
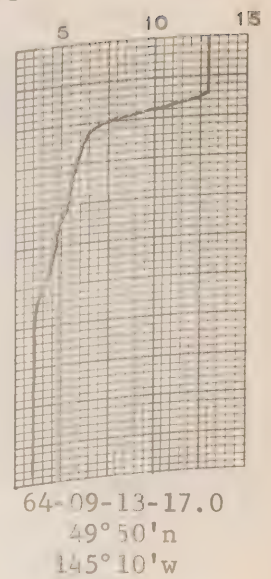
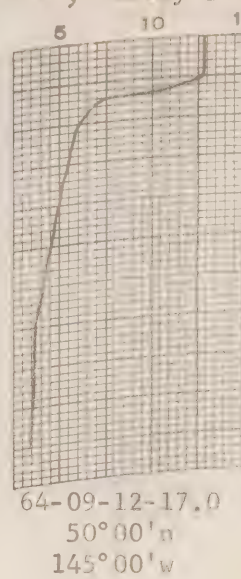
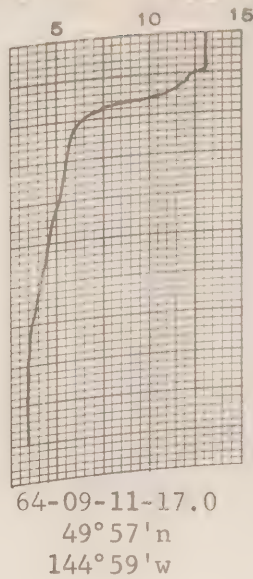
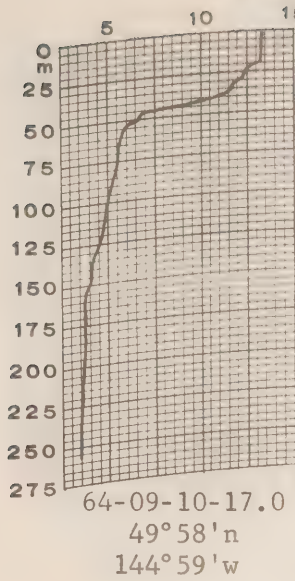


64-08-31-17.0
50°00'N
145°04'W

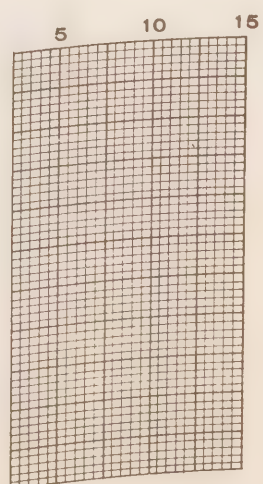
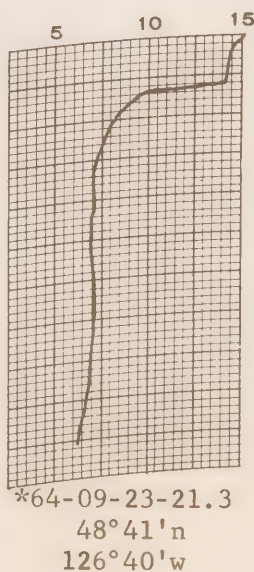
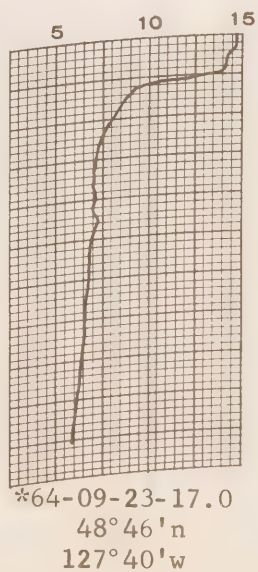
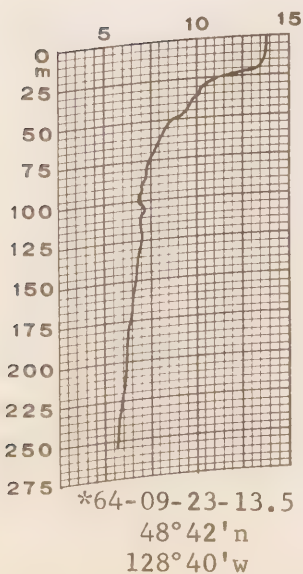
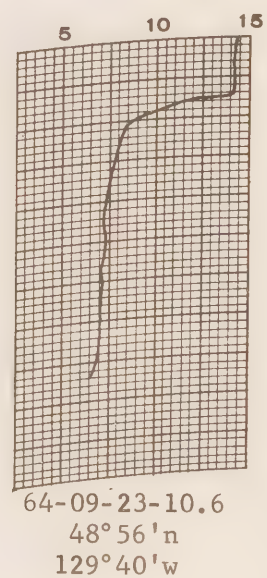
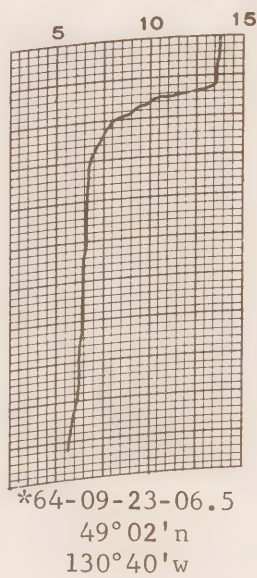
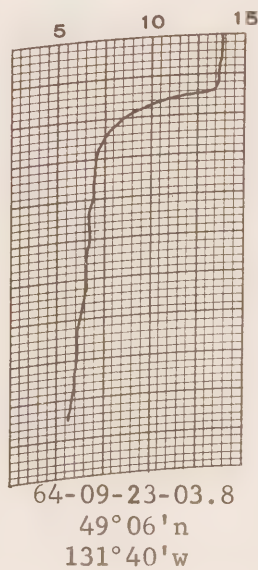
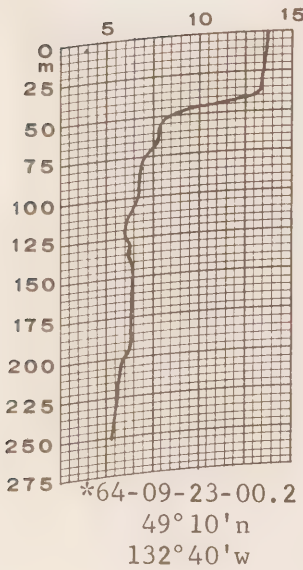
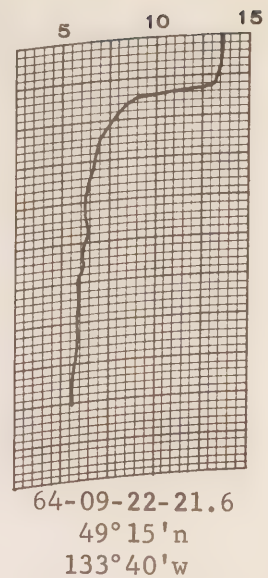
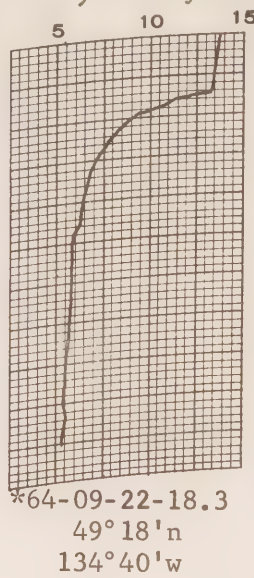
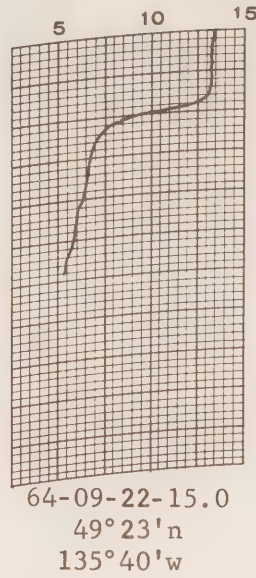
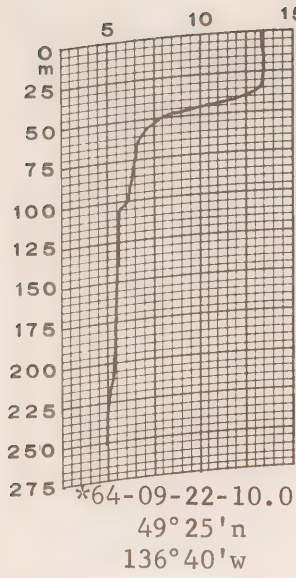
C.C.G.S. "St. Catharines", Survey P-64-3



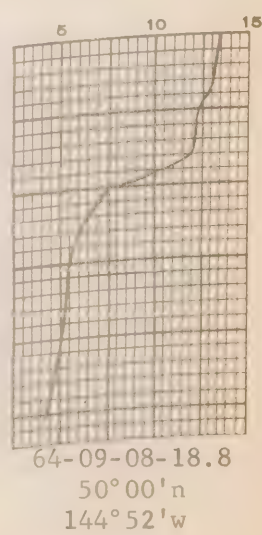
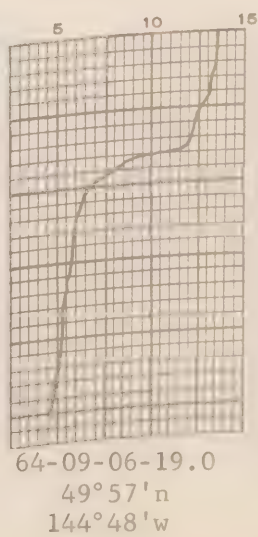
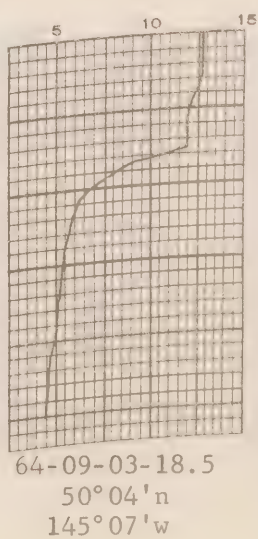
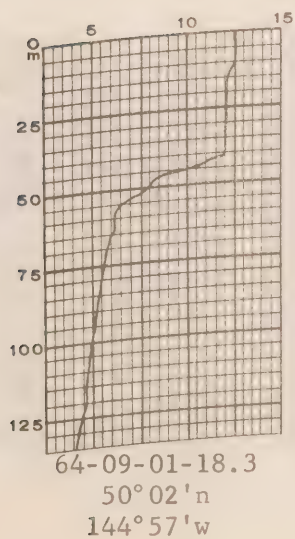
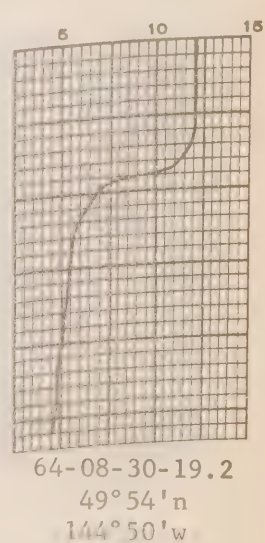
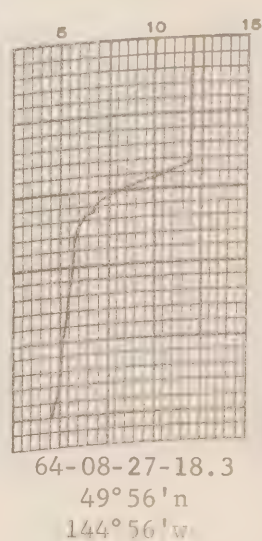
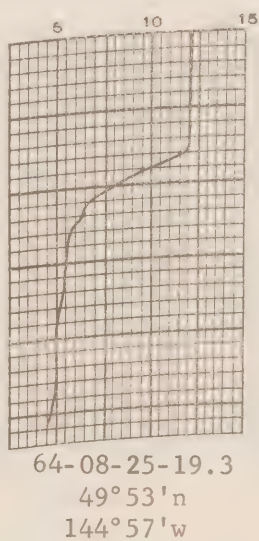
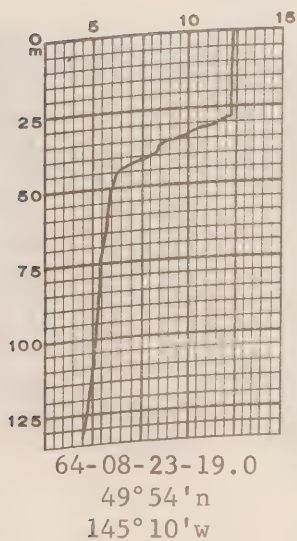
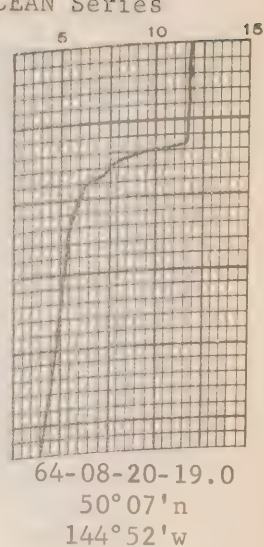
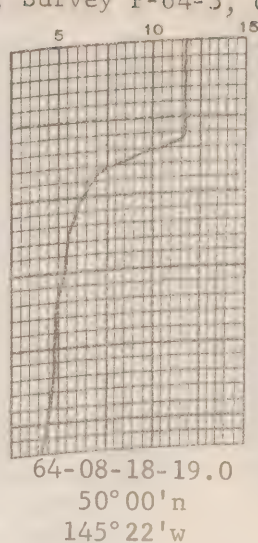
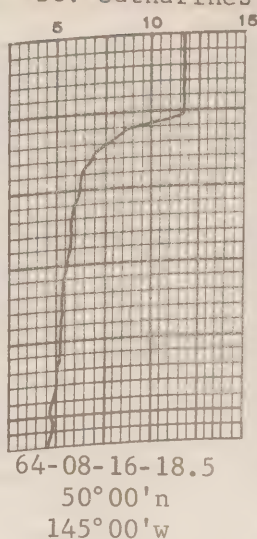
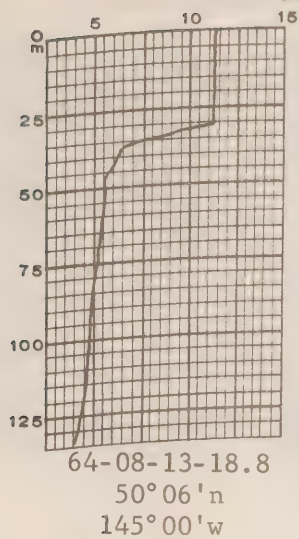
C.C.G.S. "St. Catharines", Survey P-64-3



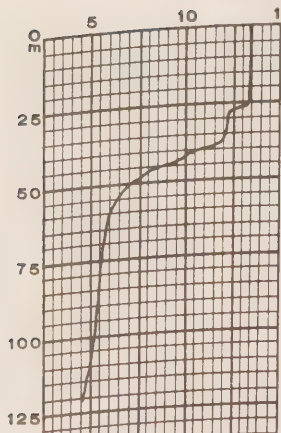
C.C.G.S. "St. Catharines", Survey P-64-3



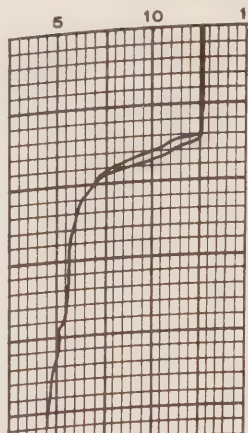
C.C.G.S. "St. Catharines", Survey P-64-3, OCEAN Series



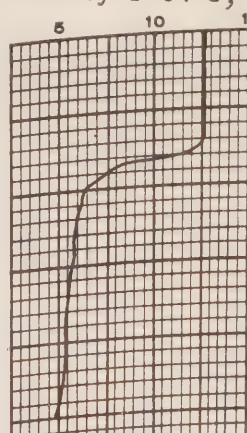
C.C.G.S. "St. Catharines", Survey P-64-3, OCEAN Series



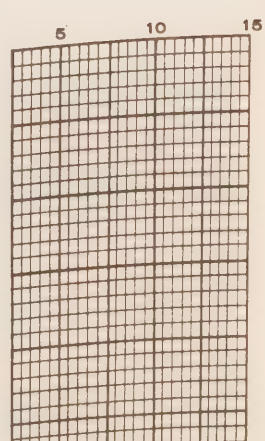
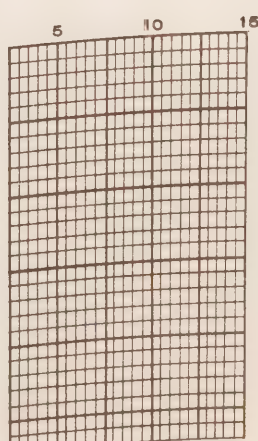
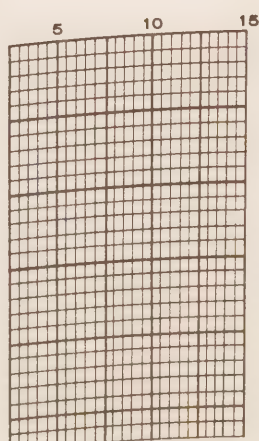
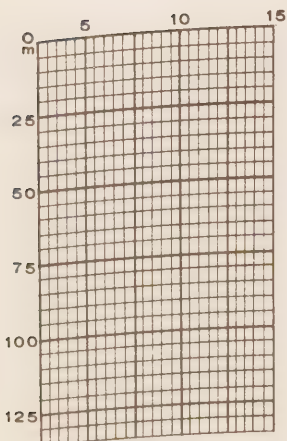
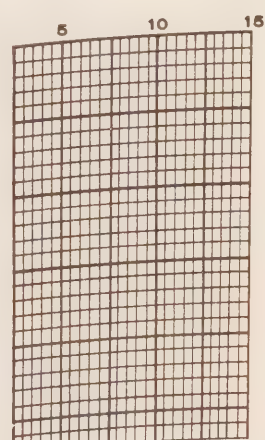
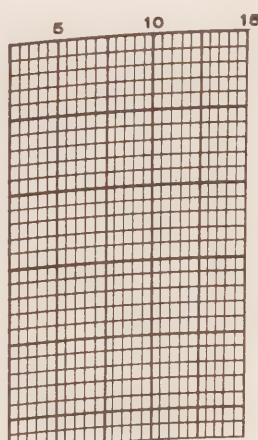
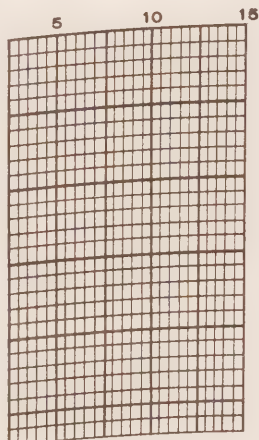
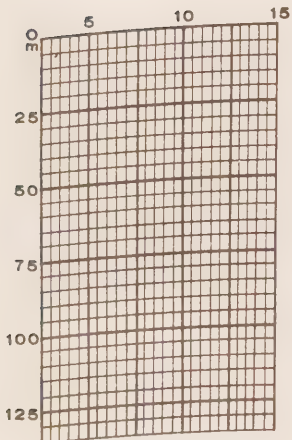
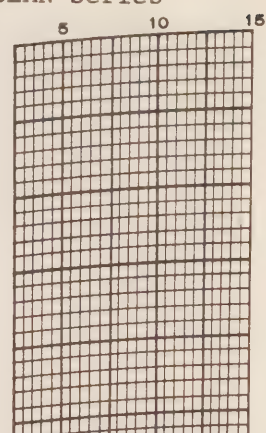
64-09-10-18.8
50° 04' N
145° 03' W



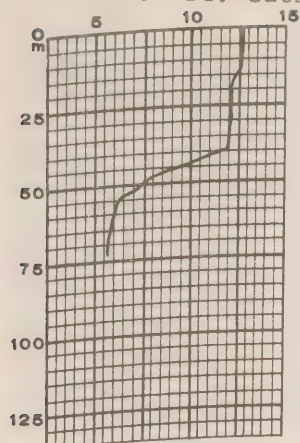
64-09-17-18.2
50° 00' N
144° 54' W



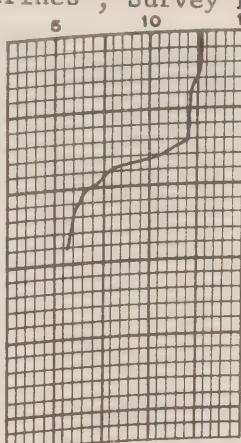
64-09-20-19.3
49° 42' N
145° 07' W



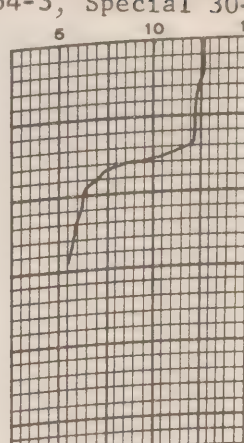
C.C.G.S. "St. Catharines", Survey P-64-3, Special 30-minute series



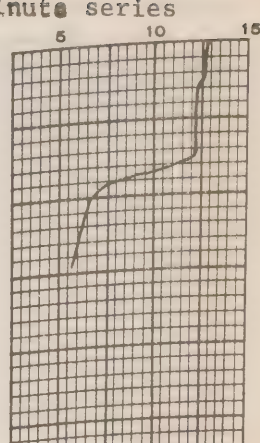
64-09-01-19.5
50°03'N
144°57'W



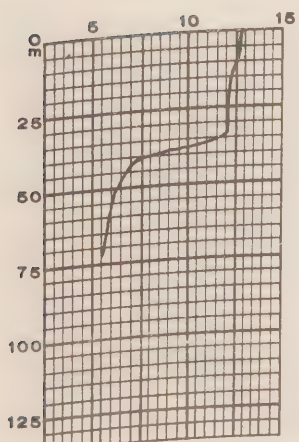
64-09-01-20.0
50°04'N
144°56'W



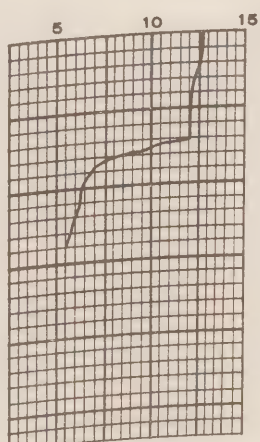
64-09-01-20.5
50°04'N
144°56'W



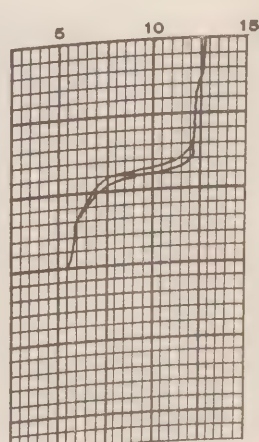
64-09-01-21.0
50°04'N
144°55'W



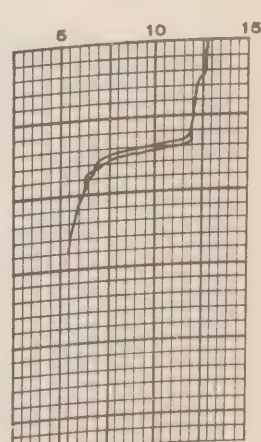
64-09-01-21.5
50°04'N
144°55'W



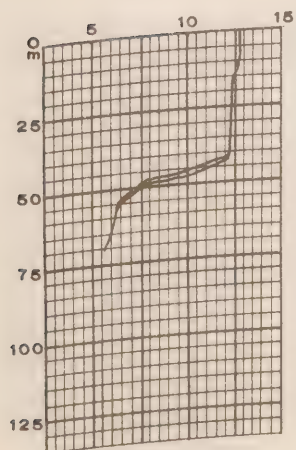
64-09-01-22.0
50°05'N
144°55'W



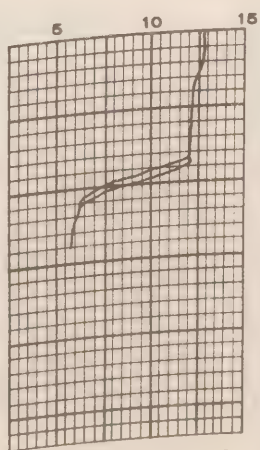
64-09-01-22.5
50°05'N
144°55'W



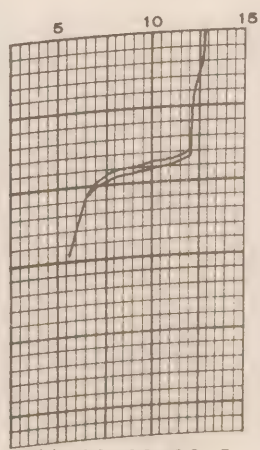
64-09-01-23.0
50°05'N
144°55'W



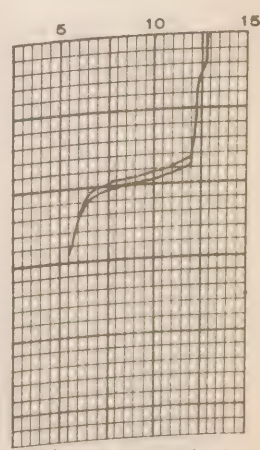
64-09-01-23.5
50°04'N
144°57'W



64-09-02-00.0
50°04'N
144°57'W

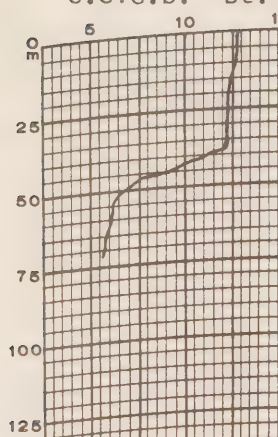


64-09-02-00.5
50°04'N
144°56'W

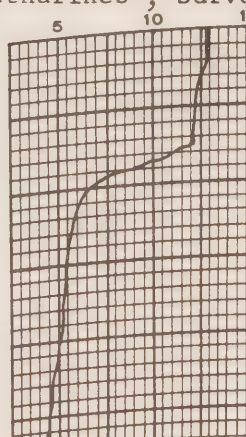


64-09-02-01.0
50°04'N
144°56'W

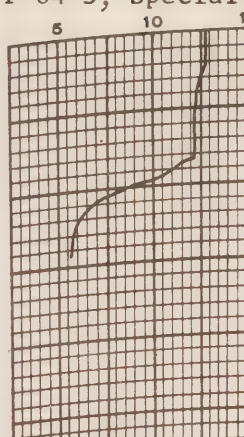
C.C.G.S. "St. Catharines", Survey P-64-3, Special 30-minute series



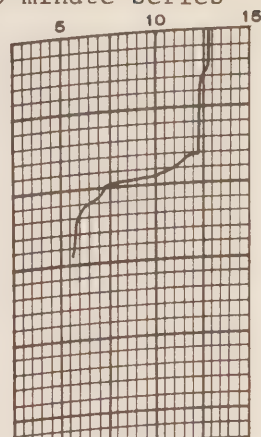
64-09-02-01.5
50°03'N
144°55'W



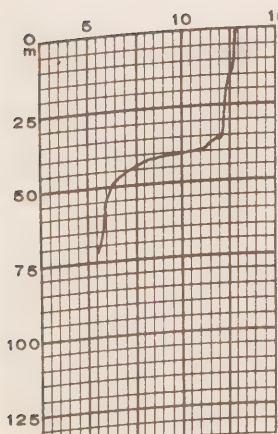
64-09-02-02.0
50°02'N
144°54'W



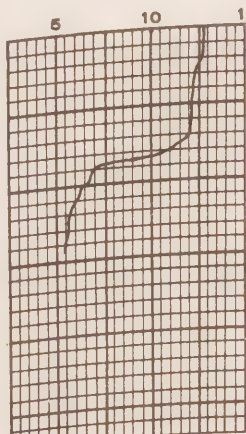
64-09-02-02.5
50°02'N
144°52'W



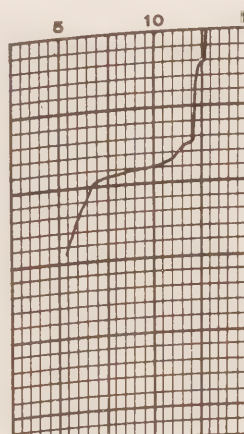
64-09-02-03.0
50°03'N
144°51'W



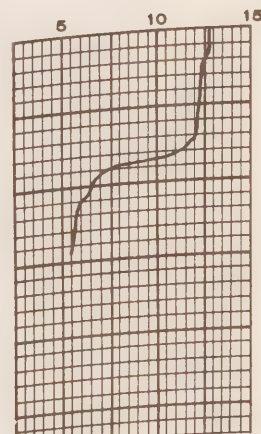
64-09-02-03.5
50°04'N
144°50'W



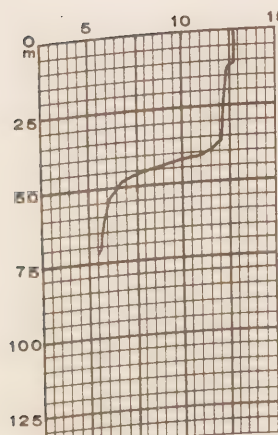
64-09-02-04.0
50°05'N
144°49'W



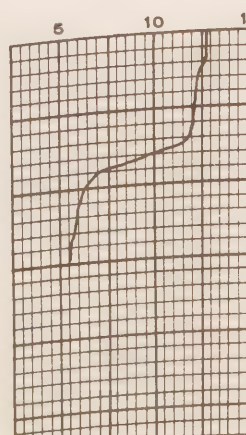
64-09-02-04.5
50°05'N
144°48'W



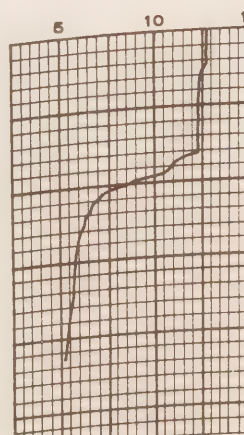
64-09-02-05.0
50°05'N
144°49'W



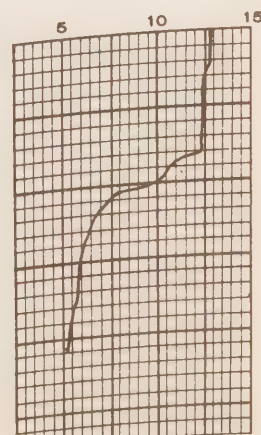
64-09-02-05.5
50°05'N
144°48'W



64-09-02-06.0
50°05'N
144°45'W

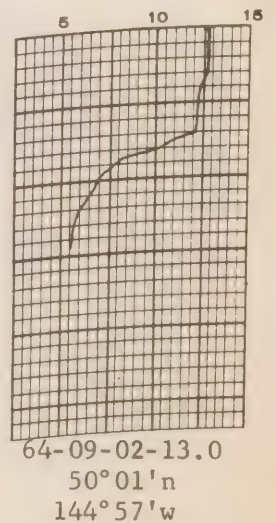
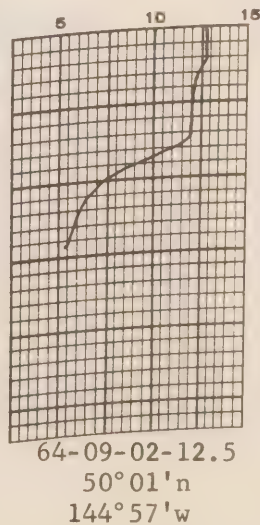
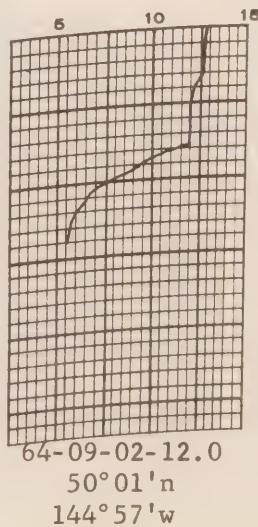
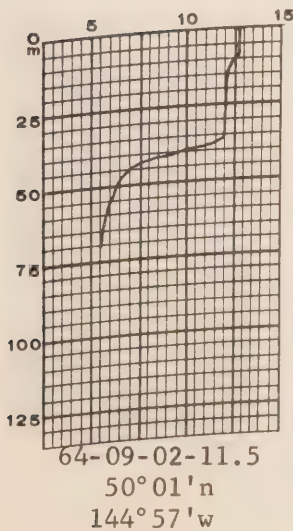
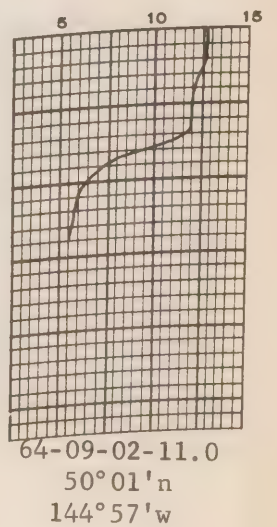
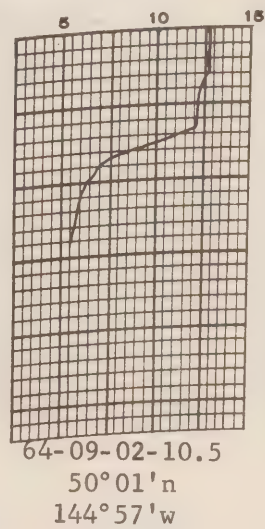
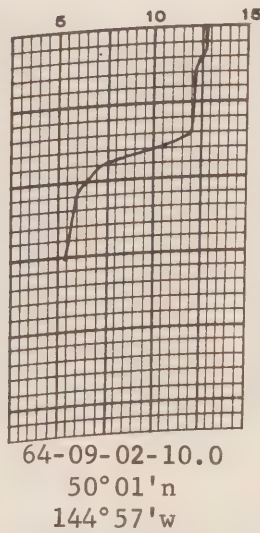
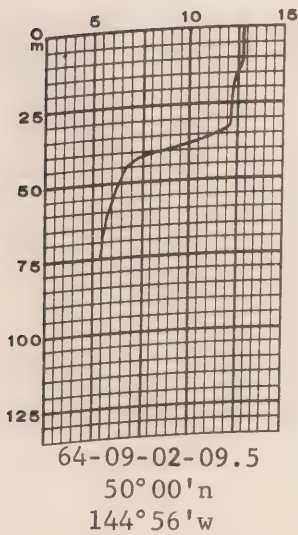
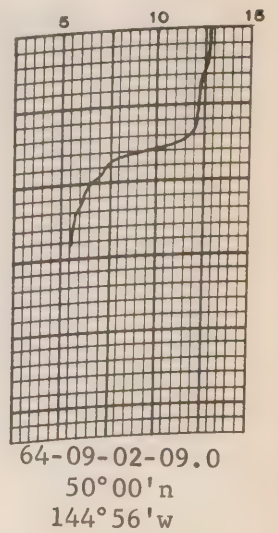
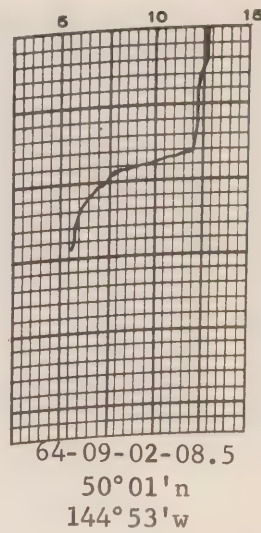
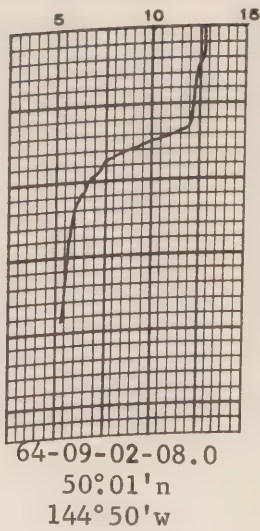
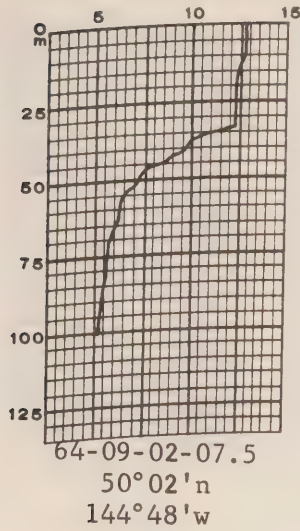


64-09-02-06.5
50°05'N
144°45'W

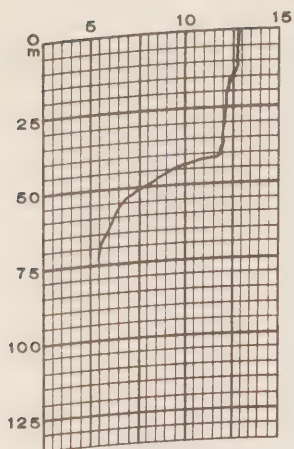


64-09-02-07.0
50°02'N
144°47'W

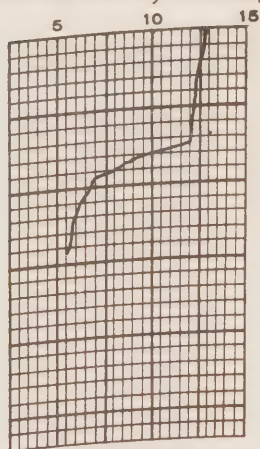
C.C.G.S. "St. Catharines", Survey P-64-3, Special 30-minute series



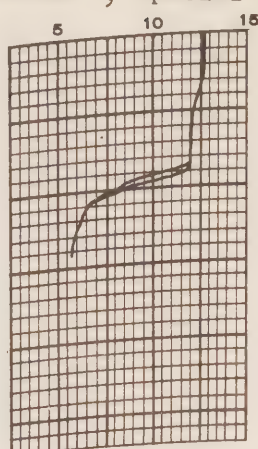
C.C.G.S. "St. Catharines", Survey P-64-3, Special 30-minute series



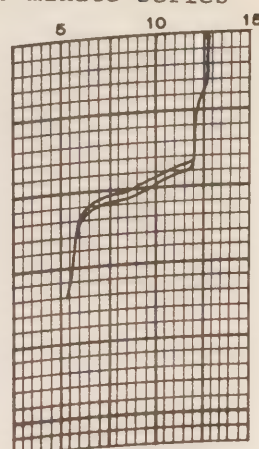
64-09-02-13.5
50°01'N
144°57'W



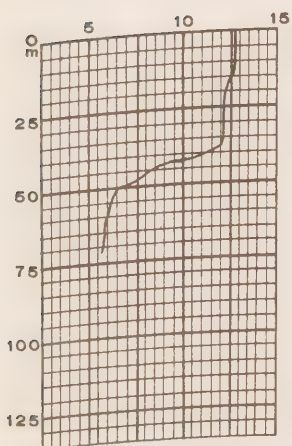
64-09-02-14.0
50°01'N
144°57'W



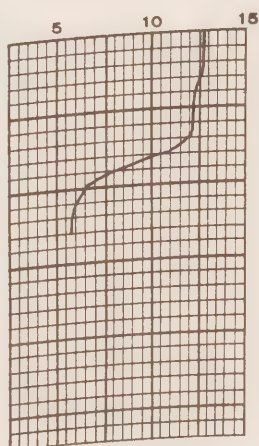
64-09-02-14.5
50°01'N
144°57'W



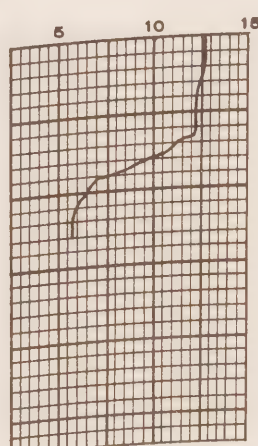
64-09-02-15.0
50°01'N
144°54'W



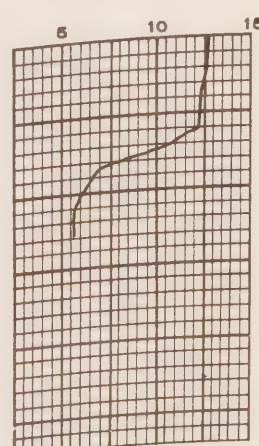
64-09-02-15.5
50°03'N
144°53'W



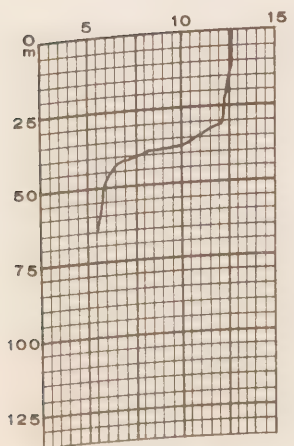
64-09-02-16.0
50°03'N
144°53'W



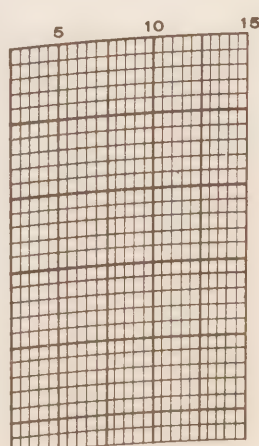
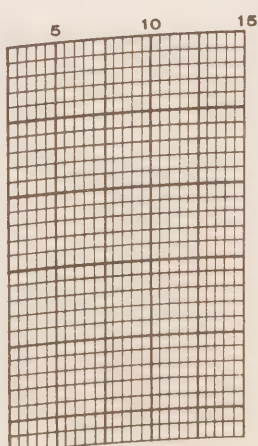
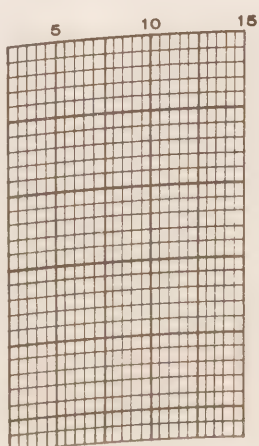
64-09-02-16.5
50°03'N
144°53'W



64-09-02-17.0
50°04'N
144°50'W



64-09-02-17.5
50°05'N
144°49'W



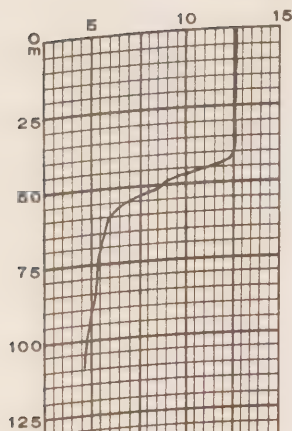
CCGS "STONETOWN" Patrol No. 62

Daily bathythermograms

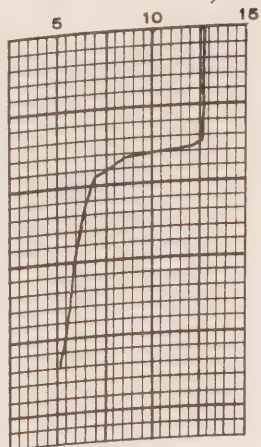
and

OCEAN series bathythermograms

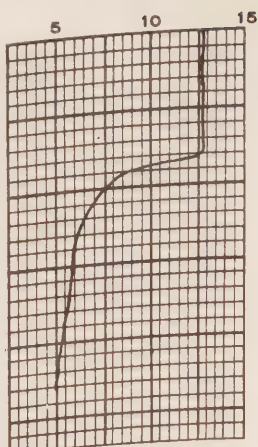
C.C.G.S. "Stonetown", Patrol No. 62



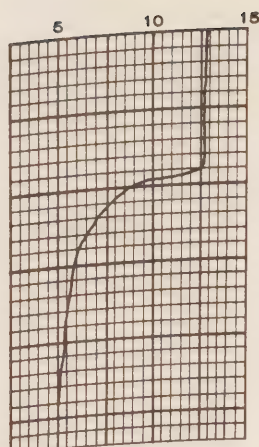
64-09-24-02.0
 $50^{\circ}12'N$
 $144^{\circ}45'W$



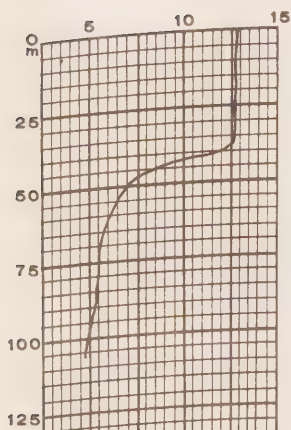
64-09-25-02.0
 $50^{\circ}12'N$
 $144^{\circ}40'W$



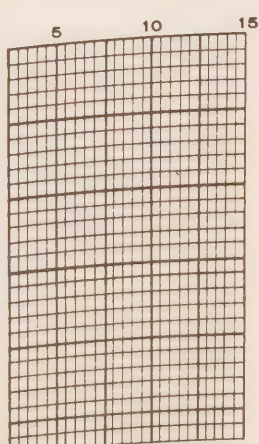
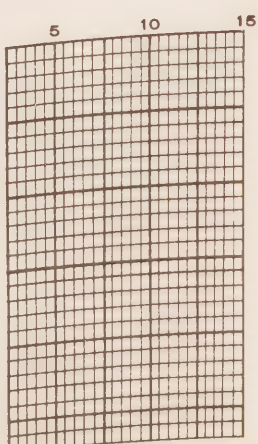
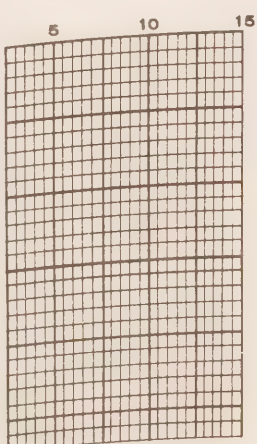
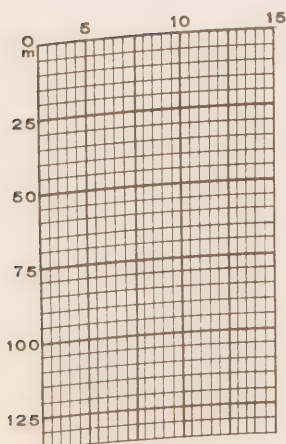
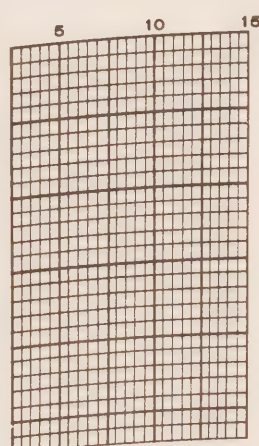
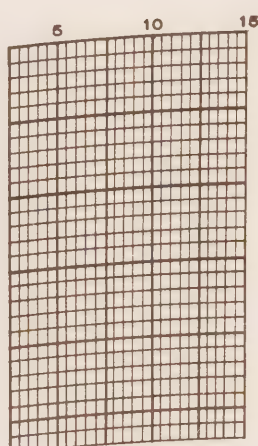
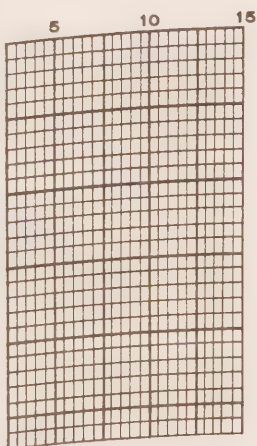
64-09-26-02.0
 $50^{\circ}04'N$
 $145^{\circ}00'W$



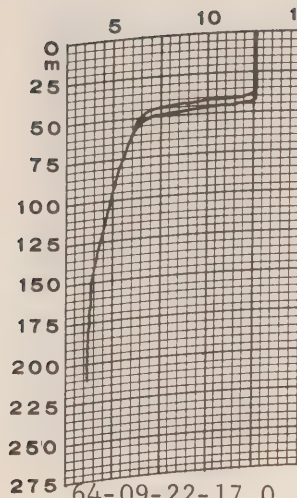
64-09-27-02.0
 $50^{\circ}10'N$
 $144^{\circ}52'W$



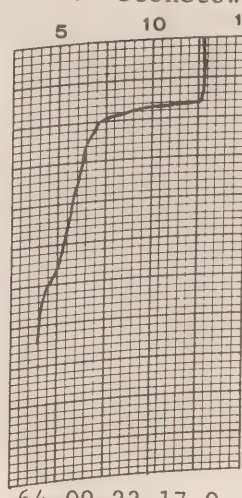
64-09-28-02.0
 $50^{\circ}03'N$
 $144^{\circ}55'W$



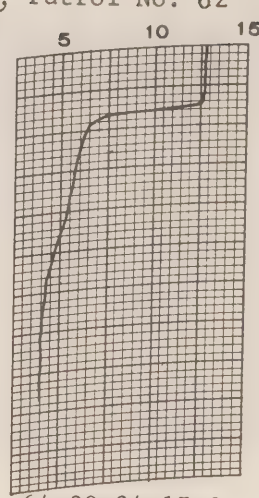
C.C.G.S. "Stonetown", Patrol No. 62



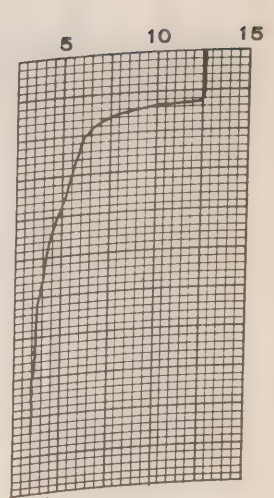
64-09-22-17.0
50°01'n
145°08'w



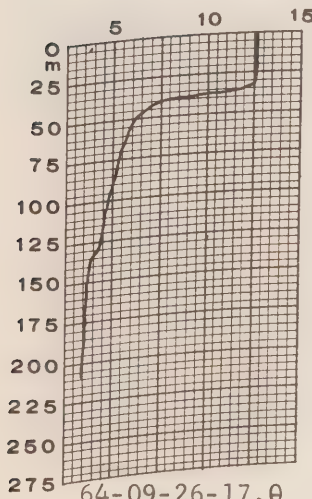
64-09-23-17.0
49°57'n
145°06'w



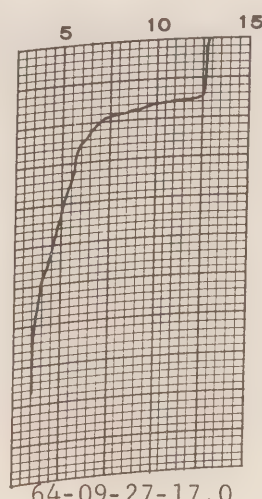
64-09-24-17.0
49°55'n
145°15'w



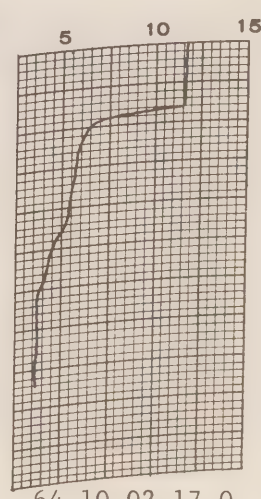
64-09-25-17.0
50°00'n
145°10'w



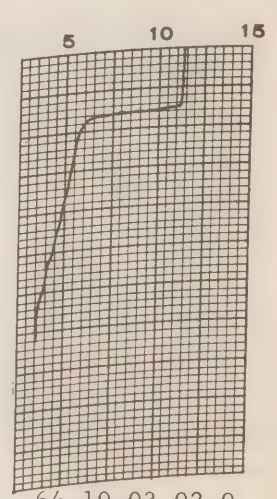
64-09-26-17.0
50°12'n
144°48'w



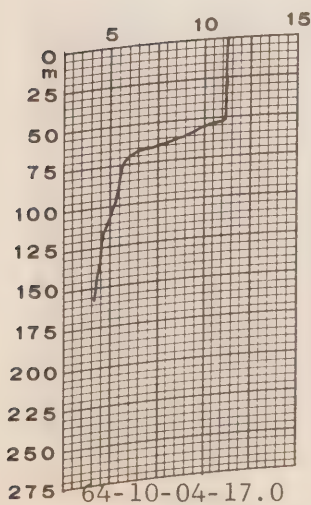
64-09-27-17.0
50°07'n
144°53'w



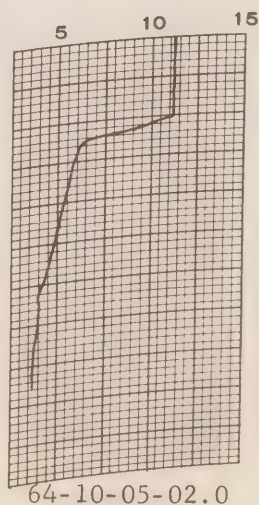
64-10-02-17.0
50°00'n
144°56'w



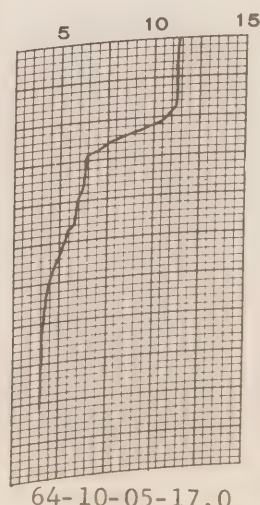
64-10-03-02.0
50°03'n
145°23'w



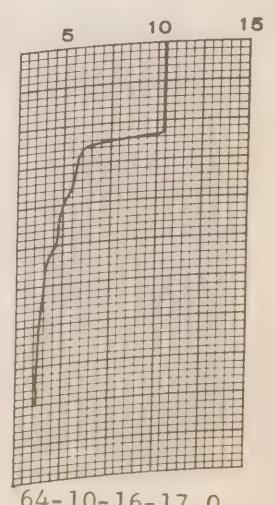
64-10-04-17.0
49°48'n
144°30'w



64-10-05-02.0
49°45'n
145°10'w

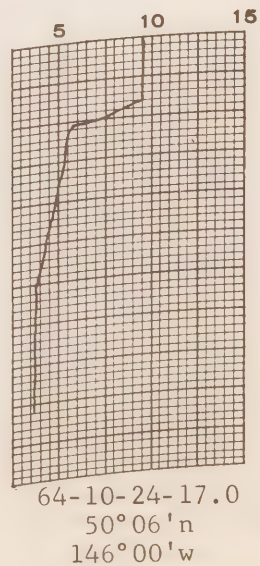
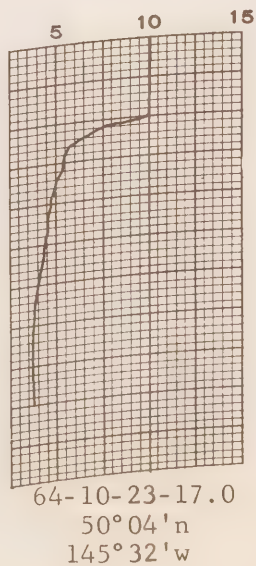
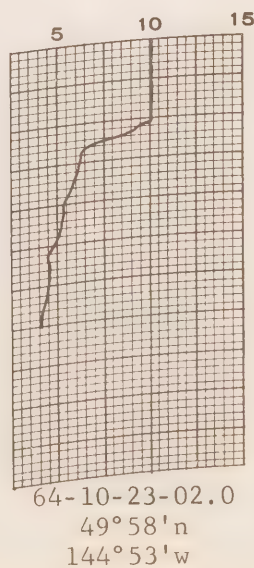
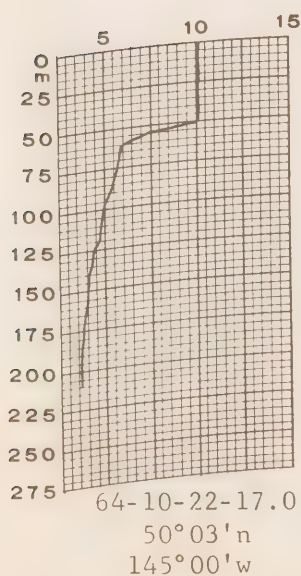
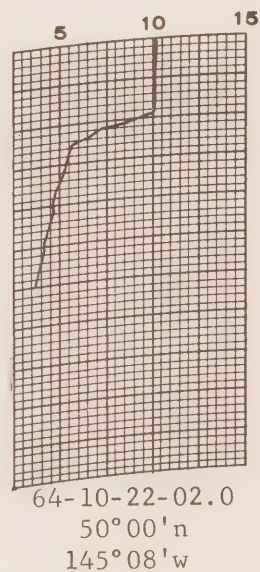
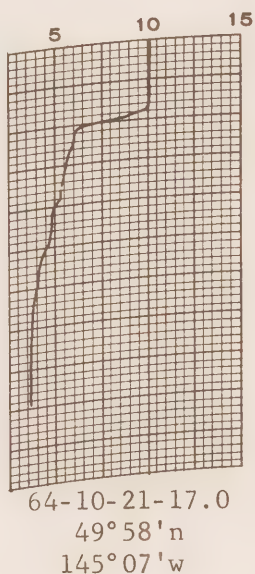
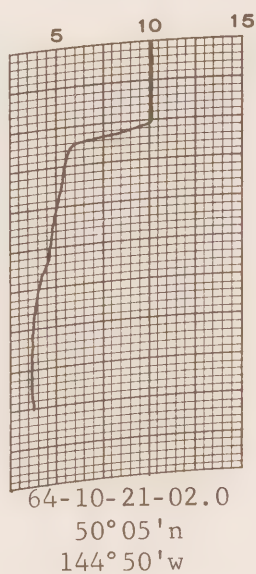
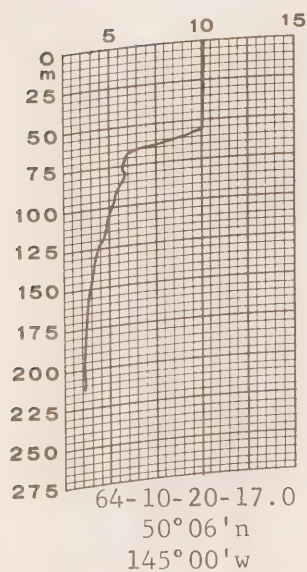
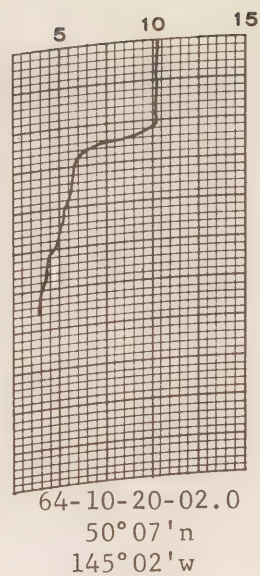
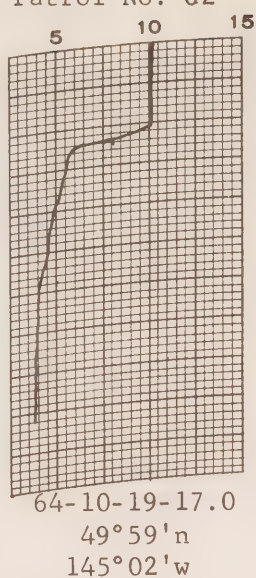
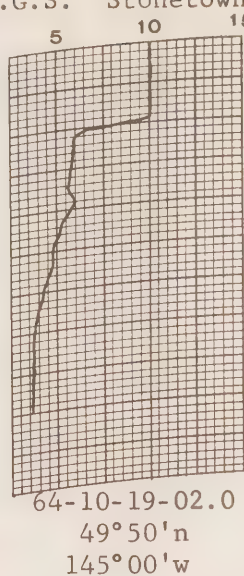
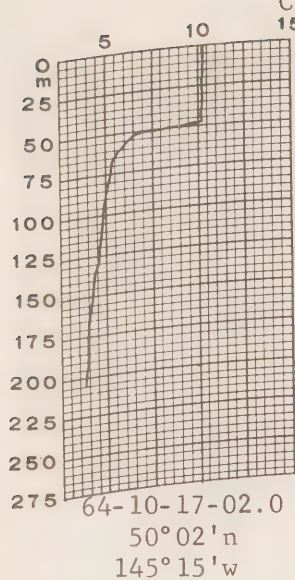


64-10-05-17.0
49°55'n
145°35'w

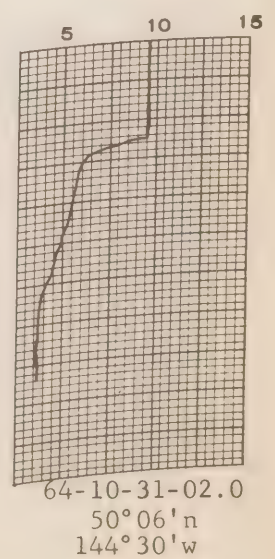
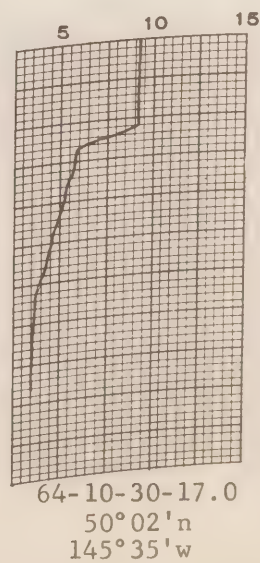
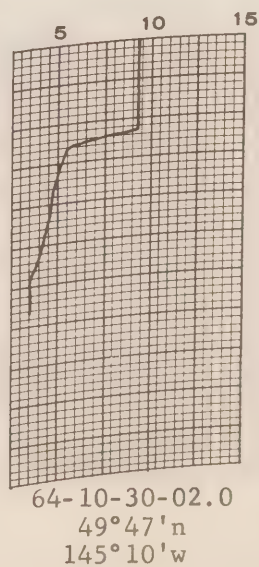
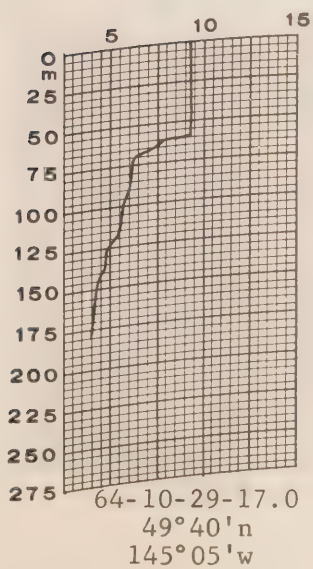
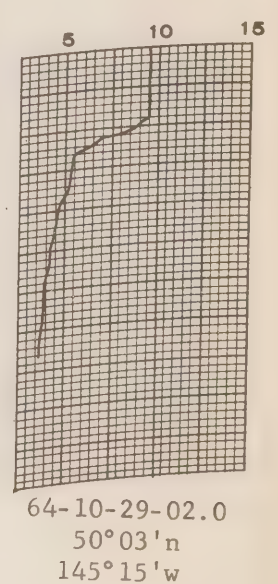
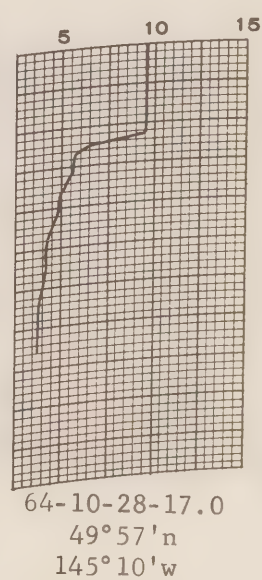
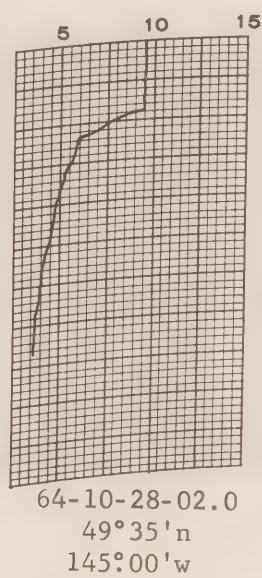
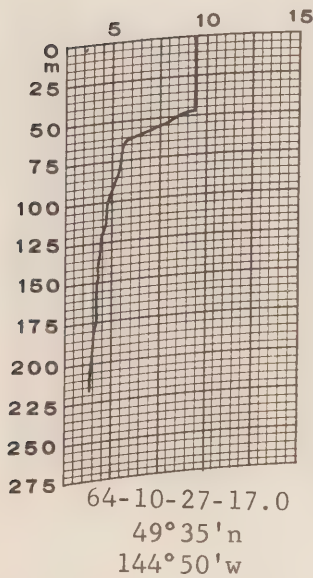
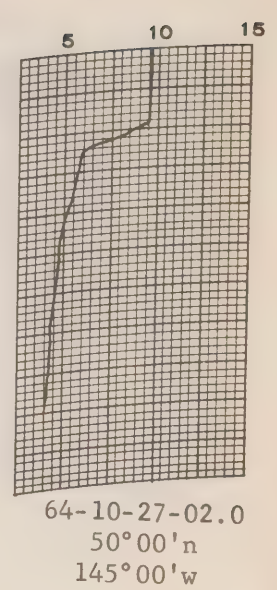
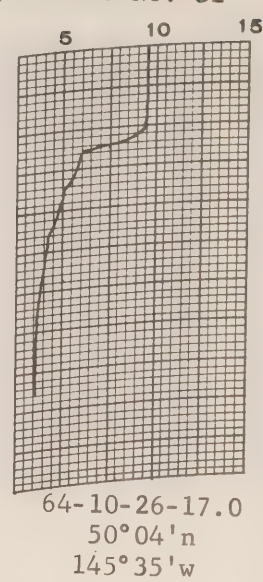
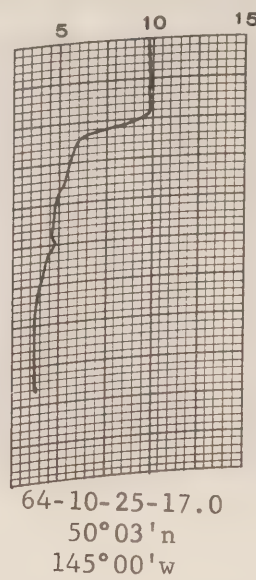
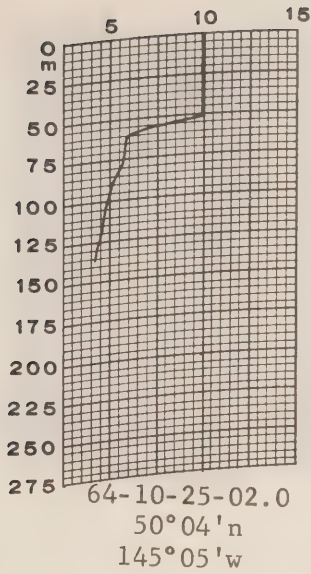


64-10-16-17.0
49°59'n
144°50'w

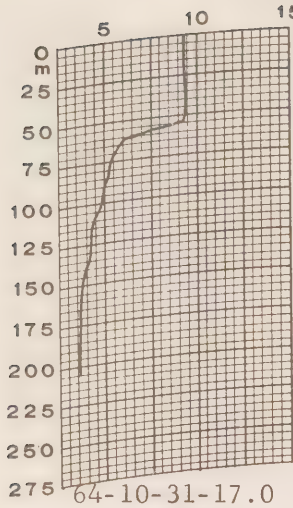
C.C.G.S. "Stonetown", Patrol No. 62



C.C.G.S. "Stonetown", Patrol No. 62



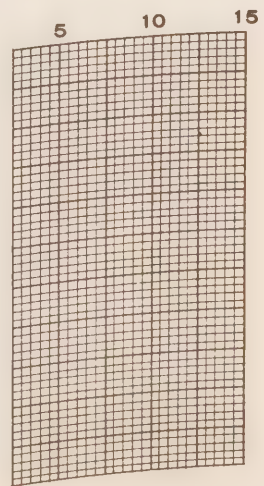
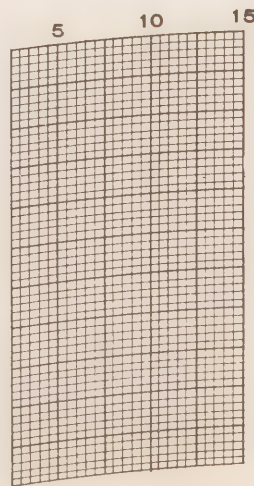
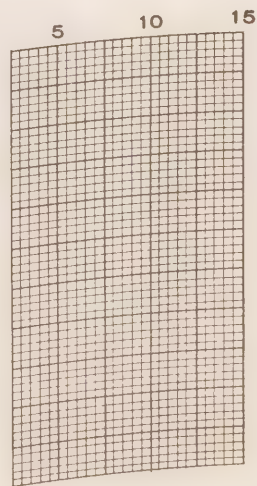
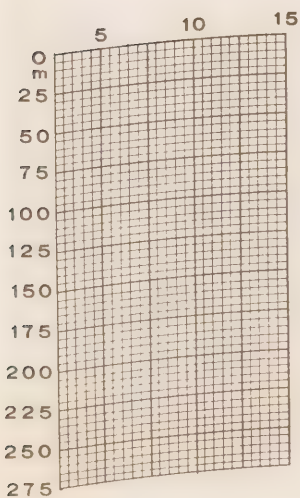
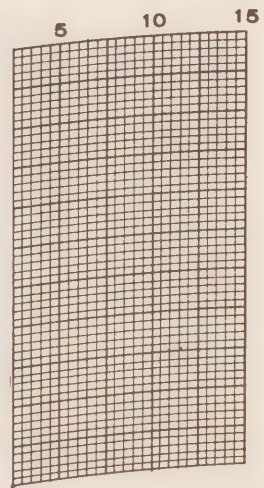
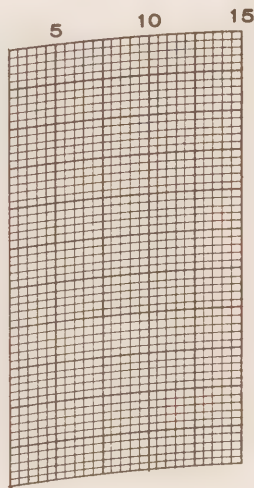
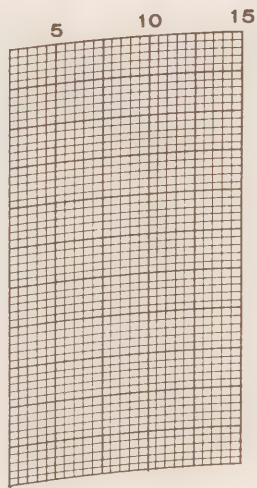
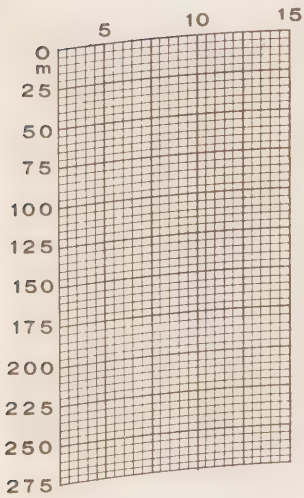
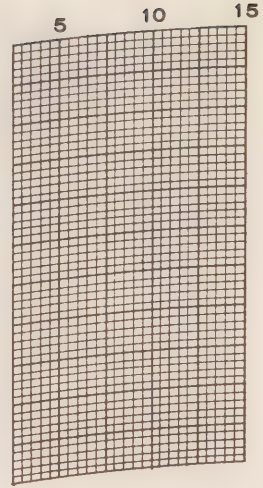
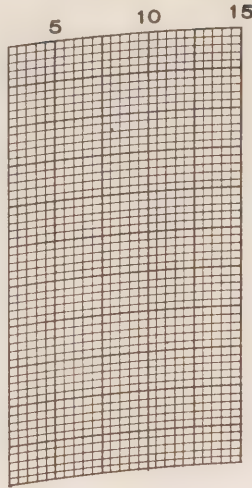
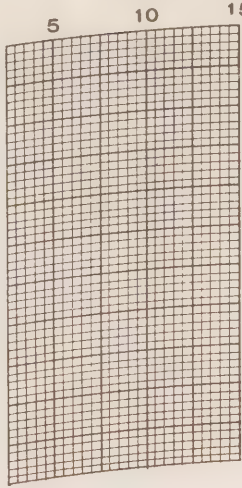
C.C.G.S. "Stonetown", Patrol No. 62



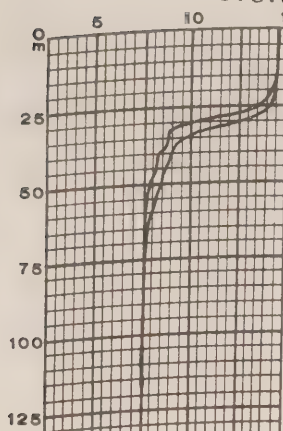
64-10-31-17.0

50°08'n

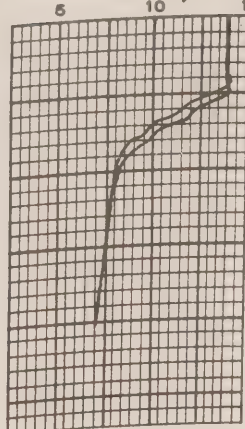
145°00'w



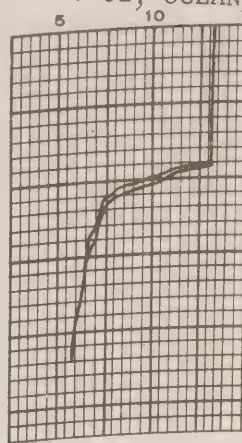
C.C.G.S. "Stonetown", Patrol No. 62, OCEAN Series



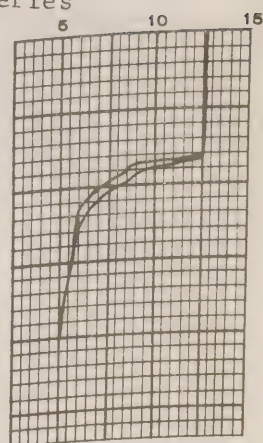
64-09-19-04.8
48°42'N
126°41'W



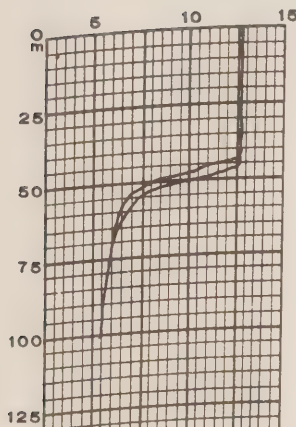
64-09-19-11.5
48°50'N
128°40'W



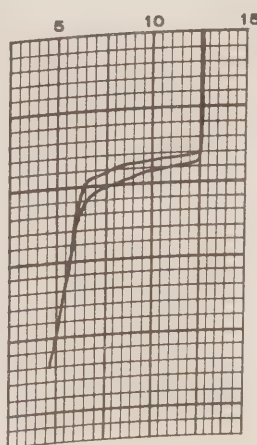
64-09-20-16.3
49°25'N
136°42'W



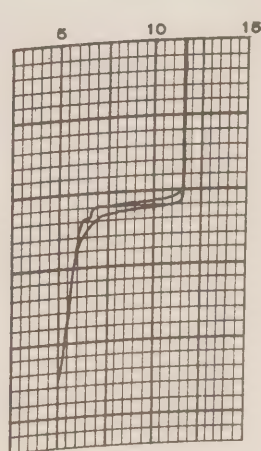
64-09-22-17.3
50°01'N
145°05'W



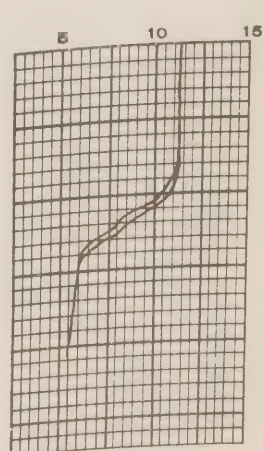
64-09-24-17.2
49°58'N
145°10'W



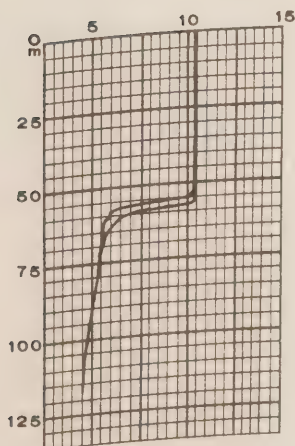
64-09-26-17.5
50°13'N
144°47'W



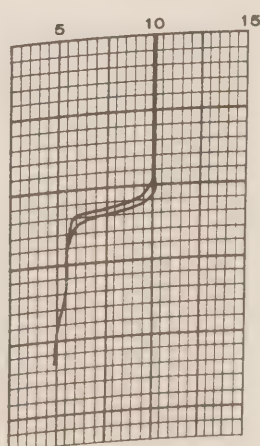
64-10-02-17.3
50°00'N
144°55'W



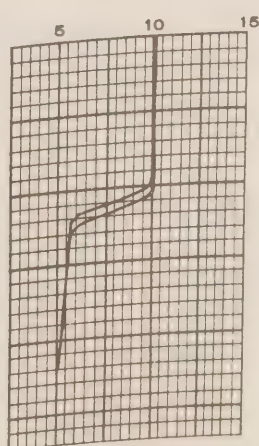
64-10-05-17.2
49°55'N
145°30'W



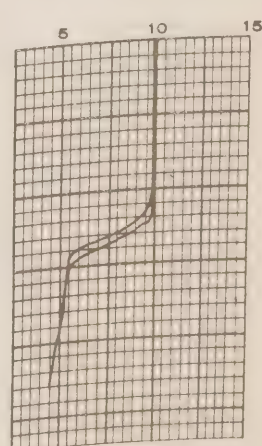
64-10-16-17.3
49°57'N
145°05'W



64-10-19-18.2
50°00'N
145°04'W

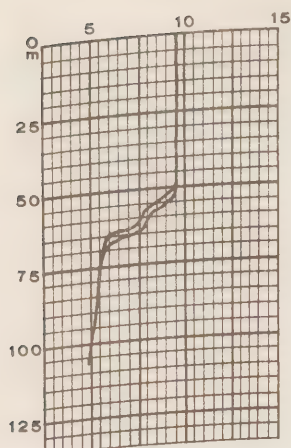


64-10-21-17.8
50°00'N
145°08'W



64-10-23-18.0
50°05'N
145°35'W

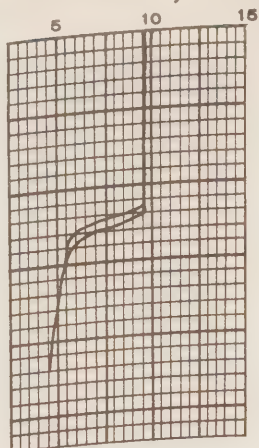
C.C.G.S. "Stonetown", Patrol No. 62, OCEAN Series



64-10-26-18.2

50°04'N

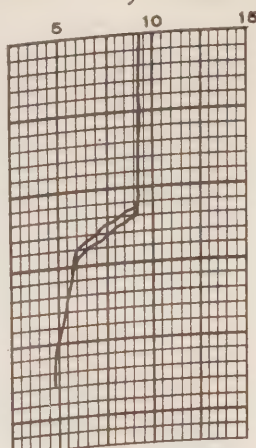
145°37'W



64-10-28-17.8

49°58'N

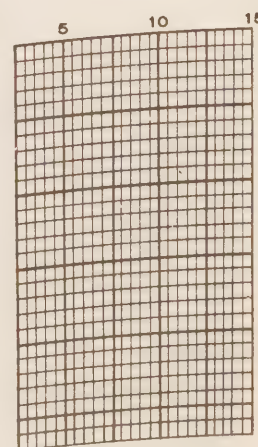
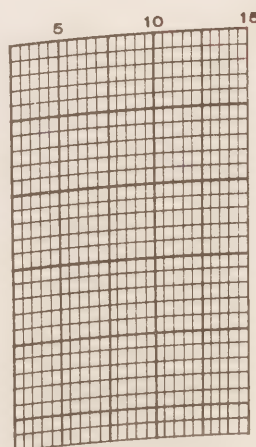
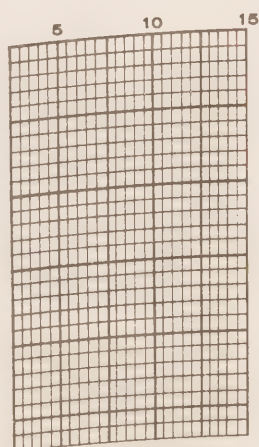
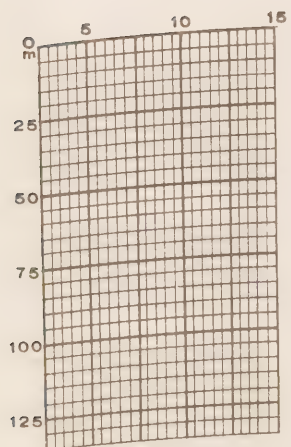
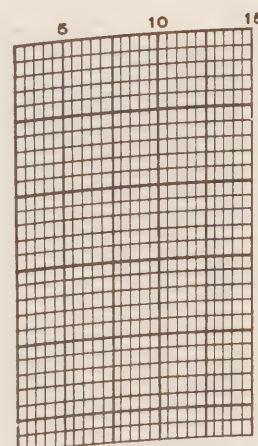
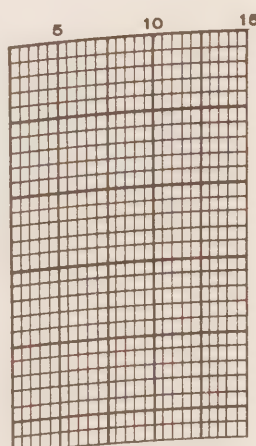
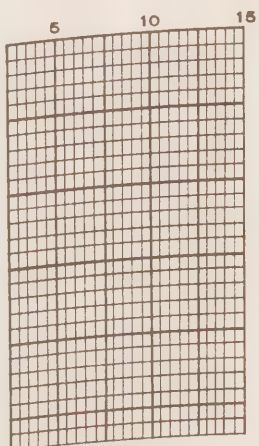
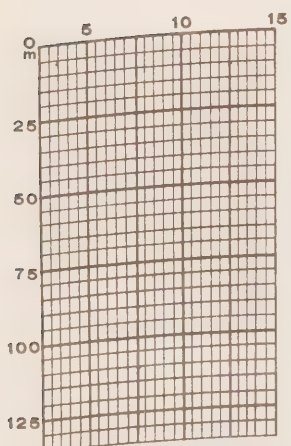
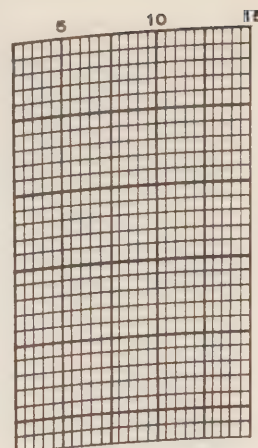
145°12'W



64-10-30-17.3

50°04'N

145°37'W



SECTION V

Surface Salinity Data

Surface Salinity Observations

Date-Time G.M.T.	Position		Salinity ‰
C.C.G.S. "St. Catharines", Survey P-64-3			
64-08-08-17.8	48°42' n	128°40' w	32.268
08-20.8	48°55'	129°40'	32.418
09-04.0	49°05'	131°40'	32.257
09-07.5	49°07'	132°40'	32.371
09-13.9	49°19'	134°40'	32.371
09-16.8	49°22'	135°40'	32.512
09-19.8	49°26'	136°40'	32.572
10-02.2	49°33'	138°40'	32.640
10-05.2	49°37'	139°40'	32.580
10-08.2	49°40'	140°40'	32.575
10-17.3	49°55'	142°40'	32.554
11-05.2	50°00'	145°00'	32.546
12-02.0	49°58'	145°02'	32.751
13-02.0	50°00'	145°00'	32.685
14-02.0	49°58'	145°00'	32.655
15-02.0	50°00'	145°00'	32.647
16-02.0	50°00'	145°02'	32.664
17-02.0	49°59'	145°02'	32.673
18-02.0	49°58'	145°02'	32.657
19-02.0	49°55'	144°52'	32.639
20-02.0	50°02'	145°02'	32.636
21-02.0	50°00'	145°06'	32.642
22-02.0	50°01'	144°57'	32.634
23-02.0	49°57'	145°00'	32.631
24-02.0	49°56'	144°56'	32.144(D)
25-02.0	49°57'	144°14'	32.639
26-03.0	50°01'	145°01'	32.632
27-02.0	49°55'	145°15'	32.614
28-02.0	50°02'	145°13'	32.638
29-02.0	49°59'	145°12'	32.679
30-02.0	50°00'	145°02'	32.635
31-02.0	50°00'	145°00'	32.631
64-09-01-02.0	50°04'	145°00'	32.636
02-02.0	50°02'	144°54'	32.618
03-02.0	49°56'	145°00'	32.624
04-02.0	49°58'	145°00'	32.631
05-02.0	50°04'	145°05'	32.621
07-02.0	49°58'	145°00'	32.640
08-02.0	50°00'	144°52'	32.609
09-02.0	50°01'	144°57'	32.633
10-02.0	49°57'	144°55'	32.629

(D) Doubtful value

Surface Salinity Observations

Date-Time	Position		Salinity
G.M.T.			‰
C.C.G.S. "St. Catharines", Survey P-64-3			
64-09-11-02.0	49°57' n	144°55' w	32.630
12-02.0	49°59'	145°05'	32.625
13-02.0	49°55'	145°10'	32.658
14-02.0	49°58'	144°50'	32.539
15-02.0	50°03'	145°05'	32.620
16-02.0	50°00'	145°14'	32.691
17-02.0	50°01'	145°02'	32.661
18-02.0	50°00'	144°58'	32.692
19-02.0	49°56'	145°04'	32.653
20-02.0	49°57'	145°06'	32.671
21-05.0	49°55'	143°40'	32.660
21-17.0	49°45'	141°40'	32.635
22-00.5	49°36'	139°40'	32.491
22-06.8	49°30'	137°40'	32.446
22-15.0	49°23'	135°40'	32.341
22-21.6	49°15'	133°40'	32.388
23-03.8	49°06'	131°40'	32.265
23-10.6	48°56'	129°40'	32.374
C.C.G.S. "Stonetown", Patrol No. 62			
64-09-23-02.0	50°02' n	145°10' w	32.60
24-02.0	50°12'	144°45'	32.60
25-02.0	50°12'	144°40'	32.61
26-02.0	50°04'	145°00'	32.58
27-02.0	50°10'	144°52'	32.53
28-02.0	50°03'	144°55'	32.49
29-02.0	50°03'	145°05'	32.65
30-02.0	49°56'	146°12'	32.70
64-10-01-02.0	50°00'	145°35'	32.64
02-02.0	50°00'	145°08'	32.68
03-02.0	50°03'	145°23'	32.65
05-02.0	49°45'	145°10'	32.65
13-02.0	50°00'	145°15'	32.65
14-02.0	49°58'	145°00'	32.87
15-02.0	50°07'	145°05'	32.70
16-02.0	49°50'	144°35'	32.64
17-02.0	50°02'	145°15'	32.68
18-02.0	49°46'	143°58'	32.19
19-02.0	49°50'	145°00'	32.64
20-02.0	50°07'	145°02'	32.66
21-02.0	50°05'	144°50'	32.56

Surface Salinity Observations

Date-Time G.M.T.	Position		Salinity ‰
C.C.G.S. "Stonetown", Patrol No. 62			
64-10-22-02.0	50°00'n	145°08'w	32.68
23-02.0	49°58'	144°53'	32.64
24-02.0	50°00'	145°05'	32.69
25-02.0	50°04'	145°05'	32.67
26-02.0	50°02'	145°05'	32.64
27-02.0	50°00'	145°00'	32.76
28-02.0	49°35'	145°00'	32.69
29-02.0	50°03'	145°15'	32.70
30-02.0	49°47'	145°10'	32.61
31-02.0	50°06'	144°30'	32.69
64-11-01-02.0	49°55'	145°15'	32.43
02-02.0	49°50'	144°45'	32.71

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